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GENERAL PRINCIPLES

ILLUSTRATIONS OF THE PRINCIPLES

OTHER ALLIED SUBJECTS

ORIGINAL AND REVISED EDITION

THE LATE THOMAS HENRY HUXLEY, ESQ.

EDITED AND REVISED BY THE AUTHOR

BY WILLIAM J. HENRY HUXLEY, ESQ.

THE AUTHOR OF THE 'ELEMENTS OF ZOOLOGY' AND 'THE HISTORY OF THE PROGRESS OF THE HUMAN MIND' AND OTHER WORKS. LONDON: LONGMANS, GREEN, & CO. 1881.

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GENERA FILICUM;
OR
ILLUSTRATIONS OF THE FERNS,
AND
OTHER ALLIED GENERA;

FROM THE
ORIGINAL COLOURED DRAWINGS
OF
THE LATE FRANCIS BAUER, ESQ.,
BOTANIC PAINTER TO HER MAJESTY;

WITH
ADDITIONS AND DESCRIPTIVE LETTERPRESS,

BY
SIR WILLIAM JACKSON HOOKER, K.H.,
LL.D. F.R.A. & L.S.,

VICE-PRESIDENT OF THE LINNÆAN SOCIETY; HONORARY MEMBER OF THE ROYAL IRISH ACADEMY; MEMBER OF THE
IMPERIAL ACADEMY CÆSAR. LEOPOLD. NATURÆ CURIOSORUM, OF THE IMPERIAL SOCIETY CÆSAR. NATURÆ
CURIOSORUM OF MOSCOW; OF THE ROYAL ACADEMIES OF SWEDEN, PRUSSIA AND LUND; OF THE
ACADEMIES OF PHILADELPHIA, NEW YORK, BOSTON; OF THE NAT. HIST. SOCIETY OF
MONTREAL, &c., &c., &c.,

AND DIRECTOR OF THE ROYAL BOTANIC GARDENS OF KEW.



LONDON:
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COVENT GARDEN.

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GENERAL PRINCIPLES
ILLUSTRATIONS OF THE TERMS

OTHER ALLIED BRANCHES

ORIGINAL ENGLISH BRANCHES

THE LATE FRANCIS BAKER, ESQ.

GLASGOW:
PRINTED AT THE UNIVERSITY PRESS, DUNLOP STREET,
BY EDWARD KHULL.

ADDITORS AND RE-CLIFFE LETTERS

SIR WILLIAM JACKSON, M.D.

THE UNIVERSITY OF GLASGOW, 1871



LONDON:
PRINTED FOR HENRY G. BROWN, 10, ADELPHI STREET,
COTTAGE GARDEN.

TO
HIS GRACE JOHN DUKE OF BEDFORD,

&c. &c. &c.

ALIKE DISTINGUISHED BY NOBILITY OF BIRTH AND OF CHARACTER,

THE DISINTERESTED AND STEADY PATRON OF THE

NATURAL SCIENCES,

AND OF

BOTANY AND HORTICULTURE IN PARTICULAR,

THE PRESENT WORK,

WHICH OWES MUCH TO HIS GRACE'S FRIENDSHIP AND ENCOURAGEMENT,

IS DEDICATED,

WITH THE HIGHEST SENTIMENTS OF REGARD AND ESTEEM,

BY HIS GRATEFUL AND OBEDIENT SERVANT,

W. J. HOOKER.

PREFACE.

WHATEVER may be the merits of the present publication, it will be seen that they are entirely due to the distinguished Natural History Painter whose name appears upon the plates, and who, upon the expression of my admiration of the beauty and fidelity of the original drawings, most liberally confided them to my charge, with a view to their immediate publication. The plates have been all executed in my own residence, and under my own eye, in zincography, by a young artist, WALTER FITCH, with a delicacy and accuracy which I trust will not discredit the figures from which they were copied.

With regard to my own share in the work, I would not have it to be understood that the Genera here introduced are what I definitively recommend as, in every instance, worthy of being retained; but such as have been universally received and firmly established, or such as have been formed by Botanists whose opinions deserve attention. A more accurate examination of the several species of each Genus, which are now under review in the preparation of a "SPECIES FILICUM," will enable me hereafter to form a more correct judgment on this head than it is now in my power to do. In the meanwhile I shall pay the utmost deference to the opinions of Swartz, and our own countrymen, Sir James Smith and Mr Brown, to whose successful labours the Order of Filices owes so much; and no less to those of Professor Presl of Prague, author of the admirable "TENTAMEN PTERIDOGRAFIÆ, SEU GENERA FILICACEARUM, PRÆSERTIM JUXTA VENARUM DECURSUM ET DISTRIBUTIONEM EXPOSITA." This work, which only reached my hands after much of the present fasciculus was prepared for the press, has thrown a new light upon the distribution of the Ferns, chiefly by the

clear exposition of the arrangement of the veins or nerves. The importance of these, in the Genera of this Order, has been long ago insisted on by the learned Brown, not only in his *Prodromus Floræ Novæ Hollandiæ*, but more particularly in a proof sheet, which I had once the opportunity of seeing, on the "*Botany of Java*," which has been printed, if I mistake not, thirteen years, but which has, from some cause over which the author had no control, not yet been published.

So completely do the ideas of Dr Presl accord with my own, in regard to the limits of many Genera, that I should do him injustice were I not, in such cases, to quote his characters verbatim ; and indeed, the more attentively I study his book, and compare his descriptions with the plants themselves, the more satisfied I am that he has produced a work which will not easily be surpassed for accuracy of research, and clear and perspicuous arrangement. At present, however, I am disposed to think he has laid too much stress on the number and other circumstances connected with the bundles of vessels in the stipes, which in the Herbarium are difficult of investigation, and that the venation holds too prominent a place in the generic character :—but this opinion I may see fit to change in the progress of my undertaking.

GLASGOW, *May* 1, 1838.

TAB. I.

HYPODERRIS. *Br. in Wall. Ic. Pl. Asiat. Rar. in not.*

Sori globosi venis subparallelis ad angulos confluentes venularum reticulatarum inserti.

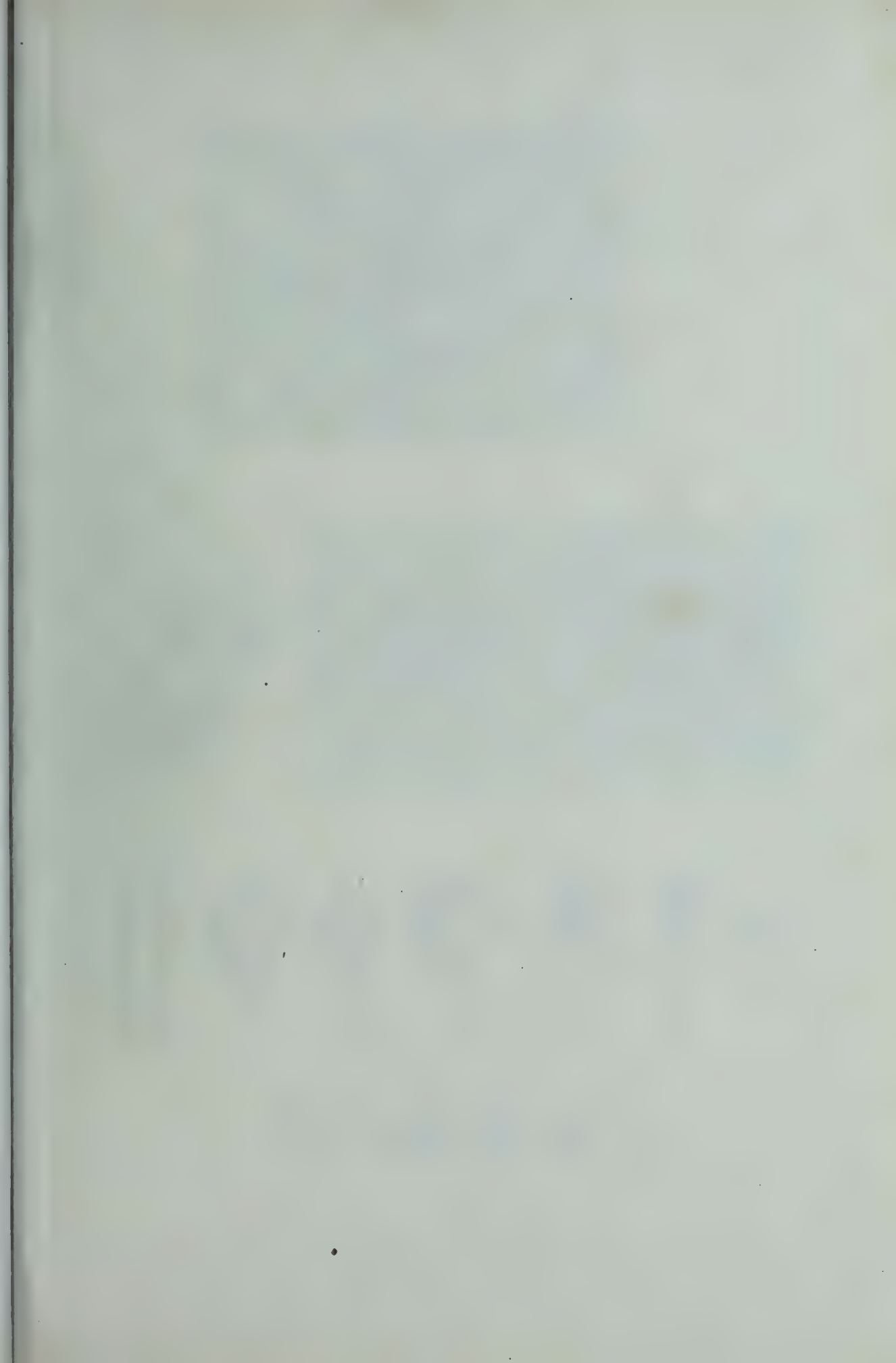
Indusium inferum, calyciforme, membranaceum, reticulatum, margine fimbriatum.

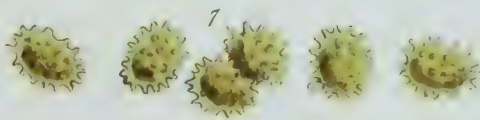
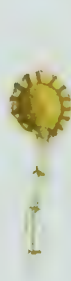
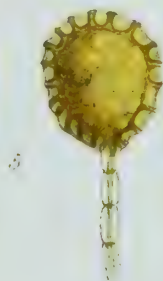
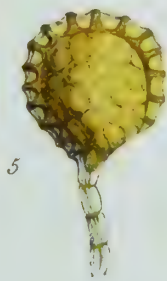
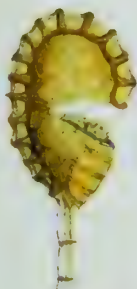
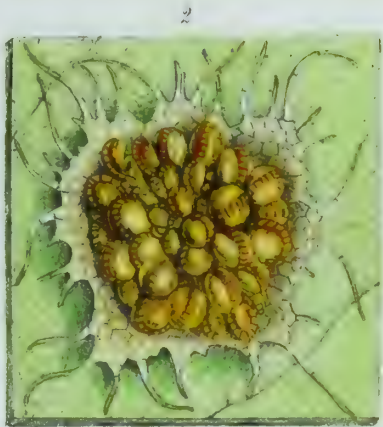
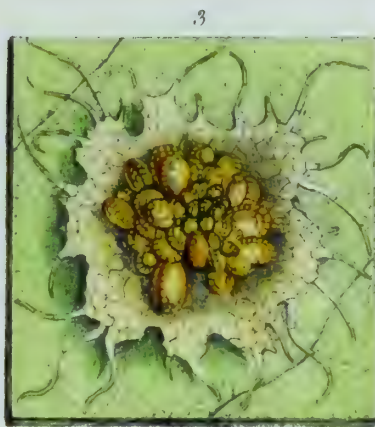
Receptaculum minutum fere obsoletum.—*Filix Ins. Trinitatis*. Frons *stipitata*, *simplex*, *membranacea*, *subcordato-auriculata*, *acuminata*, *costata*, *pinnatim venosa*, *venis alternis parallelis*, *venulis anastomosantibus*, *secundariis reticulatis*.

Hypoderris Brownii. *J. Smith Mst.* (TAB. I.)

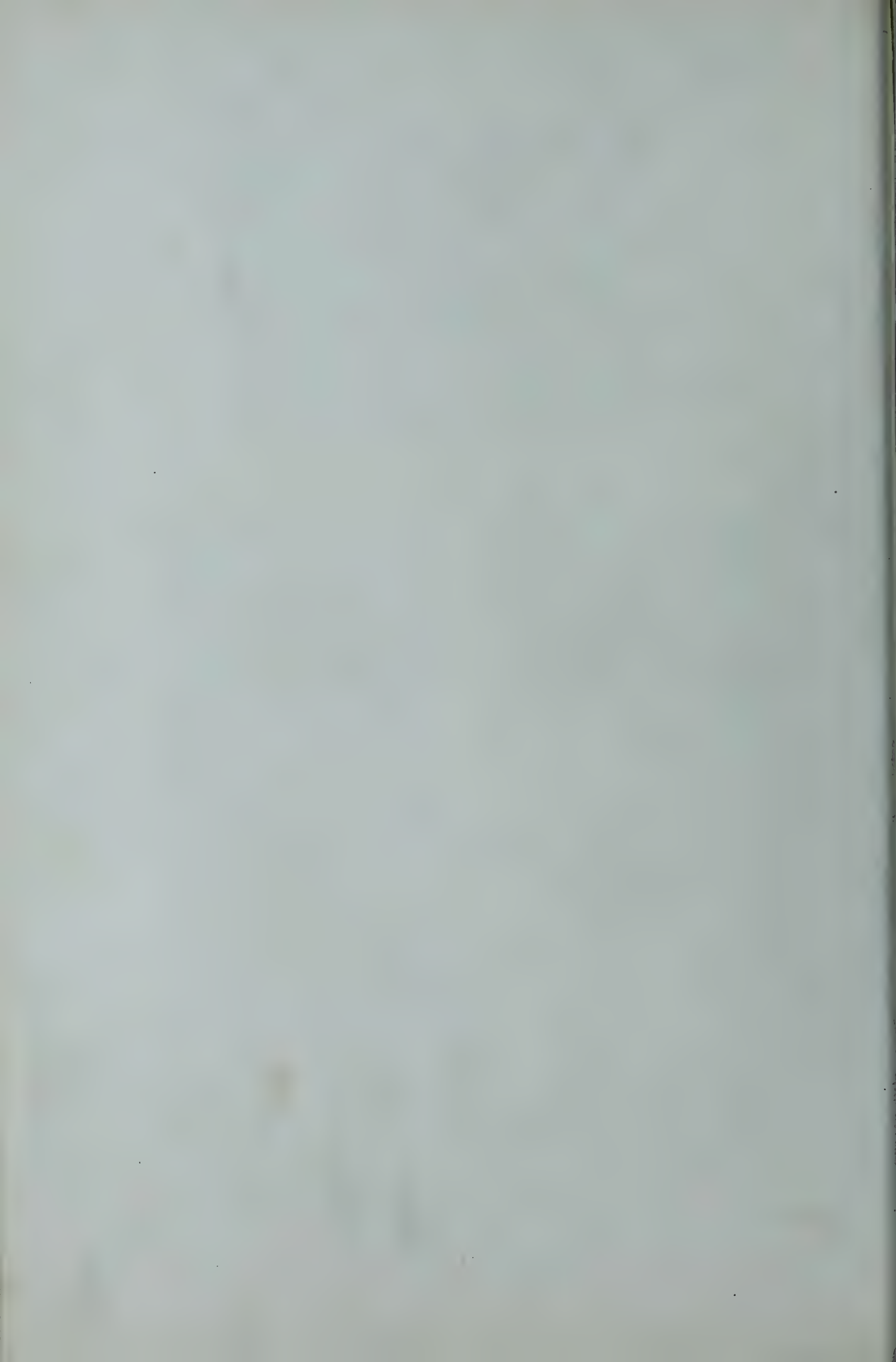
My attention has been directed to this curious genus of Ferns by Mr. John Smith of the Royal Gardens, at Kew, where he has, for 18 years, assisted Mr Aiton in the practical management of that establishment, and where he has availed himself of every opportunity, which the valuable collection in these gardens has afforded him, of improving his knowledge in botany. The Ferns have especially occupied his attention, and I am indebted to him for many valuable remarks which have accompanied Mr Bauer's drawings. It will be seen that with a fructification in many respects similar to that of *Woodsia*, Br., *Hypoderris* has a frond of similar structure to that of *Phymatodes*, Presl, of the *Polypodium* group; or to that of *Aspidium*, Presl, in the *Aspidium* group.

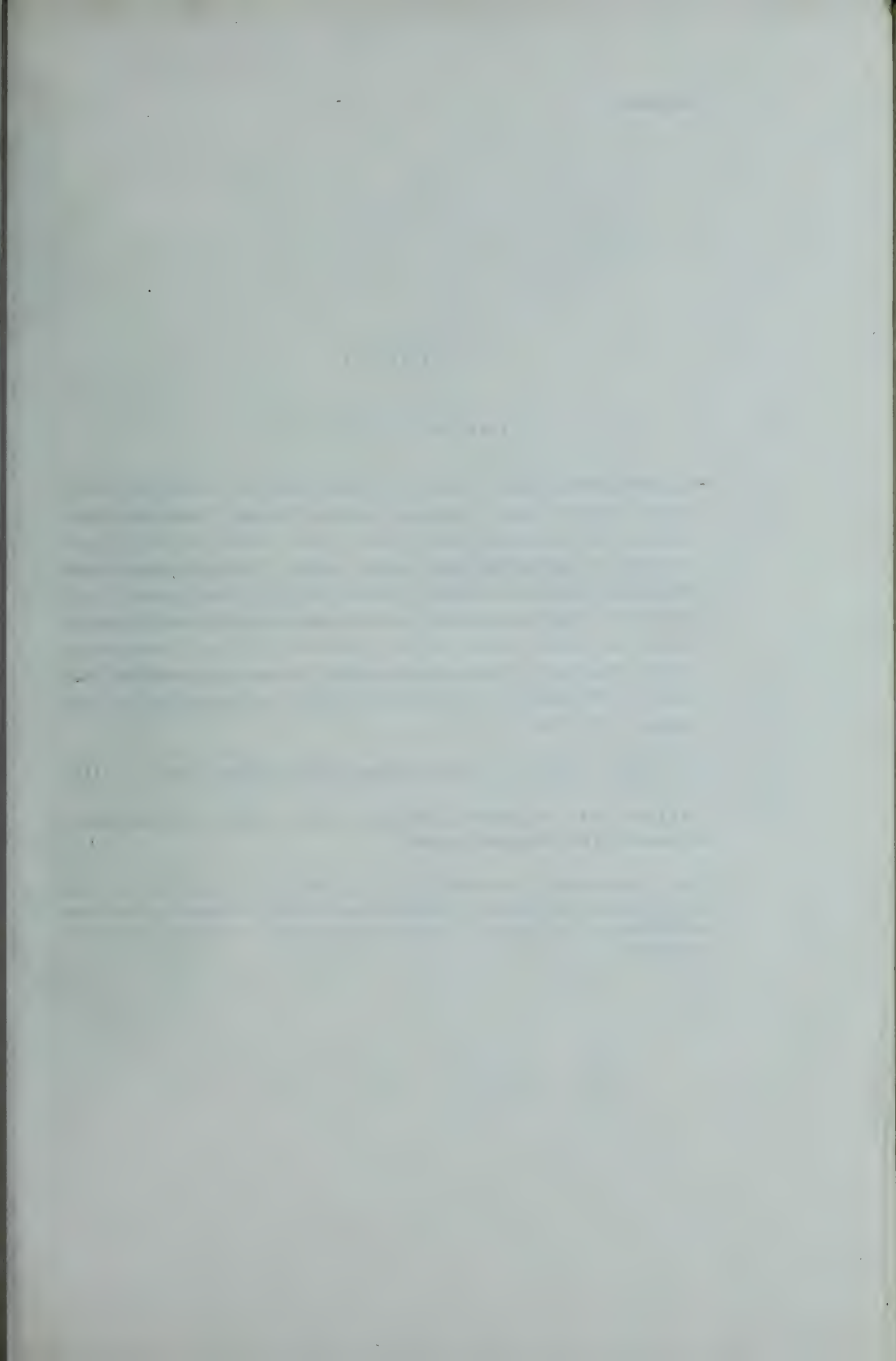
Fig. 1. View of the under surface of a small portion of the frond; *magn.* 2 diam.—*f. 2.* A perfect sorus; *m.* 25 diam.—*f. 3.* A more ripe sorus; *m.* 25 diam.—*f. 4.* A small portion of the indusium; *m.* 100 diam.—*f. 5, 5.* Sporangia in different stages; *m.* 100 diam.—*f. 6.* Stipites of sporangia; *m.* 100 diam.—*f. 7.* Sporules; *m.* 200 diam.











TAB. III.

HYMENOCYSTIS. *C. A. Meyer.*

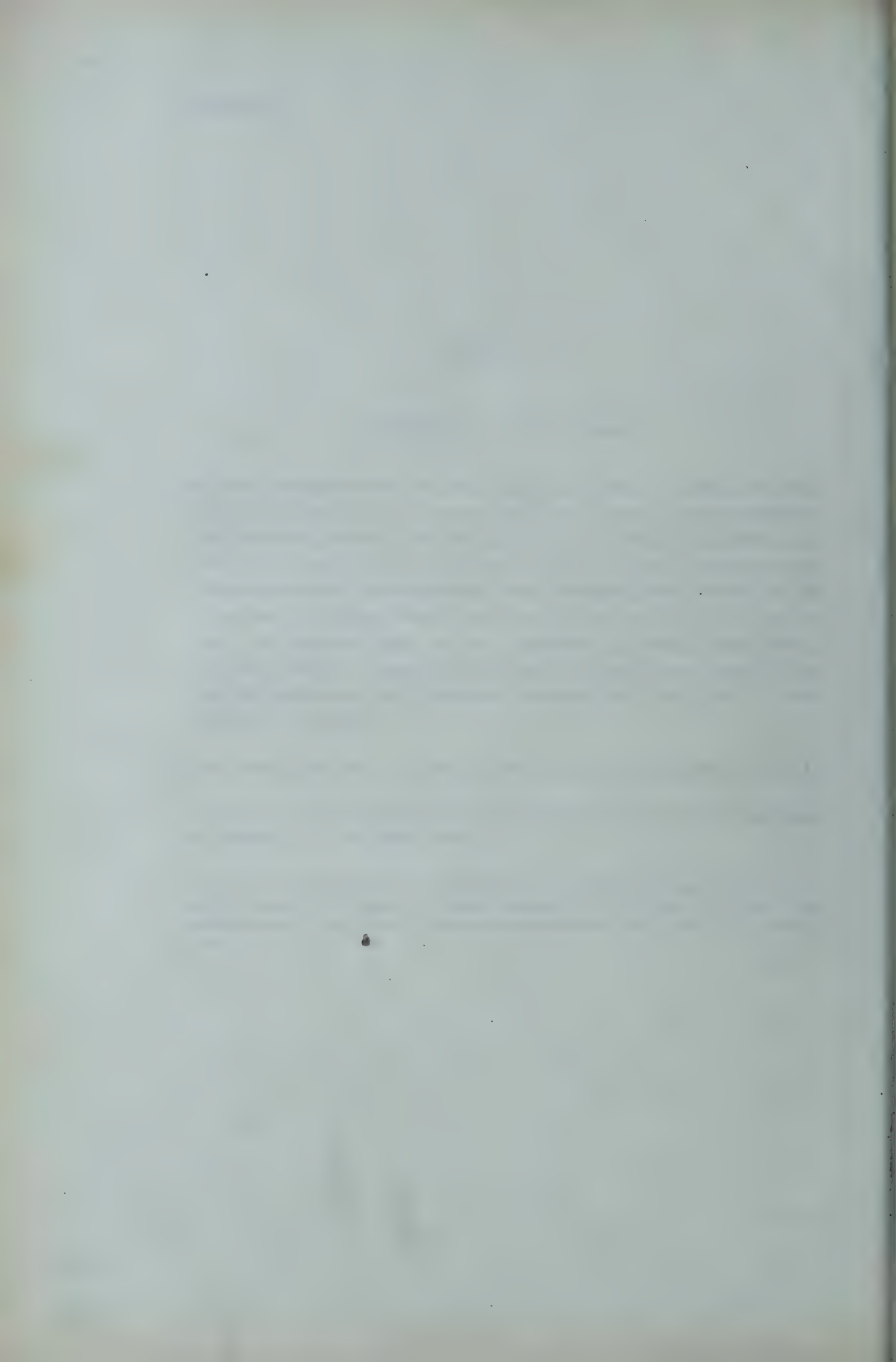
Sori globosi, dorsales, distincti, venulis (ad apicem) insidentes. *Capsulæ* pedicellatæ, annulo articulado cinctæ, receptaculo punctiformi insertæ. *Involucrum* sphæricum, hyalinum, capsulas includens, apice ore lacerato dehiscens.—*Filicula glabriuscula*, 4-6 pollices alta, habitu *Aspidii fragilis*. Frons *pinnatisecta*, *pinnis oblongis pinnatifidis, lobis obtusiusculis oblongis subovatisve obtuse dentatis vel subintegerrimis; stipite basi paleaceo*. Sori nunc pauciores, minores, margini approximati; nunc majores, copiosi, conferti. *Involucrum* *Cyatheæ*; *receptaculum et capsulæ* *Woodsiæ*.—In rupestribus promontorii Caucasici prope acidulam Nartzana (alt. 500 hexap.), et in lapidosis ad torrentem Terek prope Kobi (alt. 1000 hexap.) *C. A. Meyer.*

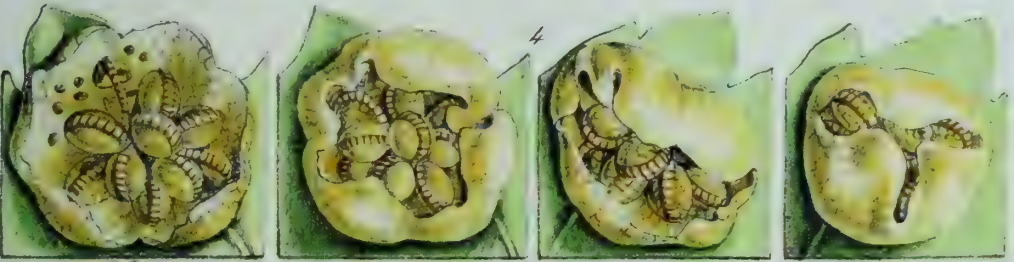
Hymenocystis Caucasica. C. A. Meyer, Enum. Pl. Cauc. et Casp. p. 229. (TAB. III.)

As I have not had the opportunity of seeing this plant, I confine myself to the descriptive character of the author above quoted.

Fig. 1. Under surface of a portion of the frond; *magn.* 10 diam.—*f. 2.* Upper surface of a small portion of the same; *m.* 10 diam.—*f. 3.* Smaller portion of do.; *m.* 20 diam.—*f. 4.* Views of sori in different stages; *m.* 20 diam.—*f. 5.* Sporangia in different stages; *m.* 100 diam.—*f. 6.* Sporules; *m.* 200 diam.









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TAB. IV.

CREMIDARIA. *Presl.*

Sori in medio dorso venularum, globosi, parvi. *Indusium* inferum, involucrans, (nunc dimidiatum) demum irregulariter fissum aut partitum. *Receptaculum* globosum, minutum.—*Arbores inermes rarius aculeatæ*. Frondes tenuiter coriaceæ bipinnatæ, pinnulis laciniisque latis. Venæ pinnatæ, utrinque prominulæ, infimæ oppositæ in arcum angulatum venuliferum anastomosantes, venulis duabus-tribus in sinum laciniarum frondis connivendo-excurrentibus, superiores furcatæ, venulis parallelis. *Presl.*

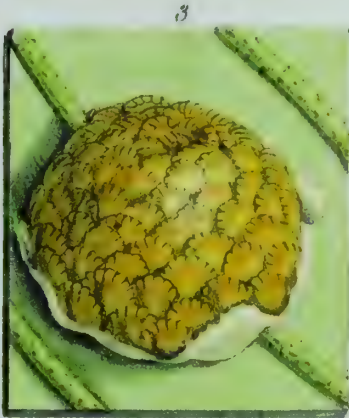
Cremidaria horrida. Presl. (TAB. IV.)—Hemitelia. Br. Cyathea. Sw.

This was drawn by Mr Bauer with the view of illustrating Mr Brown's genus *Hemitelia*, consisting, amongst other unpublished species, of *Cyathea multiflora*, *horrida* and *Capensis*, of Sm., in which the "*Sori latere venæ insident, involucro instructi fornicato, basi semicirculari infra receptaculum inserto, marginibus solutis, demum reflexo et persistente.*" Presl has, however, in his admirable "*Tentamen*," confined the genus *Hemitelia* to the *H. Capensis* alone, which has a different venation, and the sori solitary upon each lacinia, situated at the base of the lowest veinlet of the upper half of the lacinia. The other species of Mr Brown's *Hemitelia*, together with *H. obtusa*, Kaulf., *Cyathea horrida*, Sieb. (not Sw.), and *C. munita*, Willd. Herb., belong to *Cremidaria*, a genus readily distinguished from the other *Cyatheaceæ*, "*venis infimis in arcum angulatum radiato-venuliferum anastomosantibus*;" a character which, unfortunately, from a lower portion of the lacinia not being introduced into Mr Bauer's drawing, is not here represented.

Fig. 1. Portion of the under surface of the lacinia of a frond; *magn.* 5 diam.—*f. 2, 3, 4.* Sori in different states; *m.* 30 diam.—*f. 5.* Small portion of the upper surface of a lacinia; *m.* 30 diam.—*f. 6.* Small portion of the lower surface from which the sporangia and receptacle have fallen off; *m.* 30 diam.—*f. 7.* Indusium by itself; *m.* 30 diam.—*f. 8.* A vertical section of a perfect sorus; *m.* 30 diam.—*f. 9.* Sporangia in different stages; *m.* 100 diam.—*f. 10.* Sporules; *m.* 200 diam.







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TAB. V.

ALLOSORUS. *Bernhardi. Presl.*

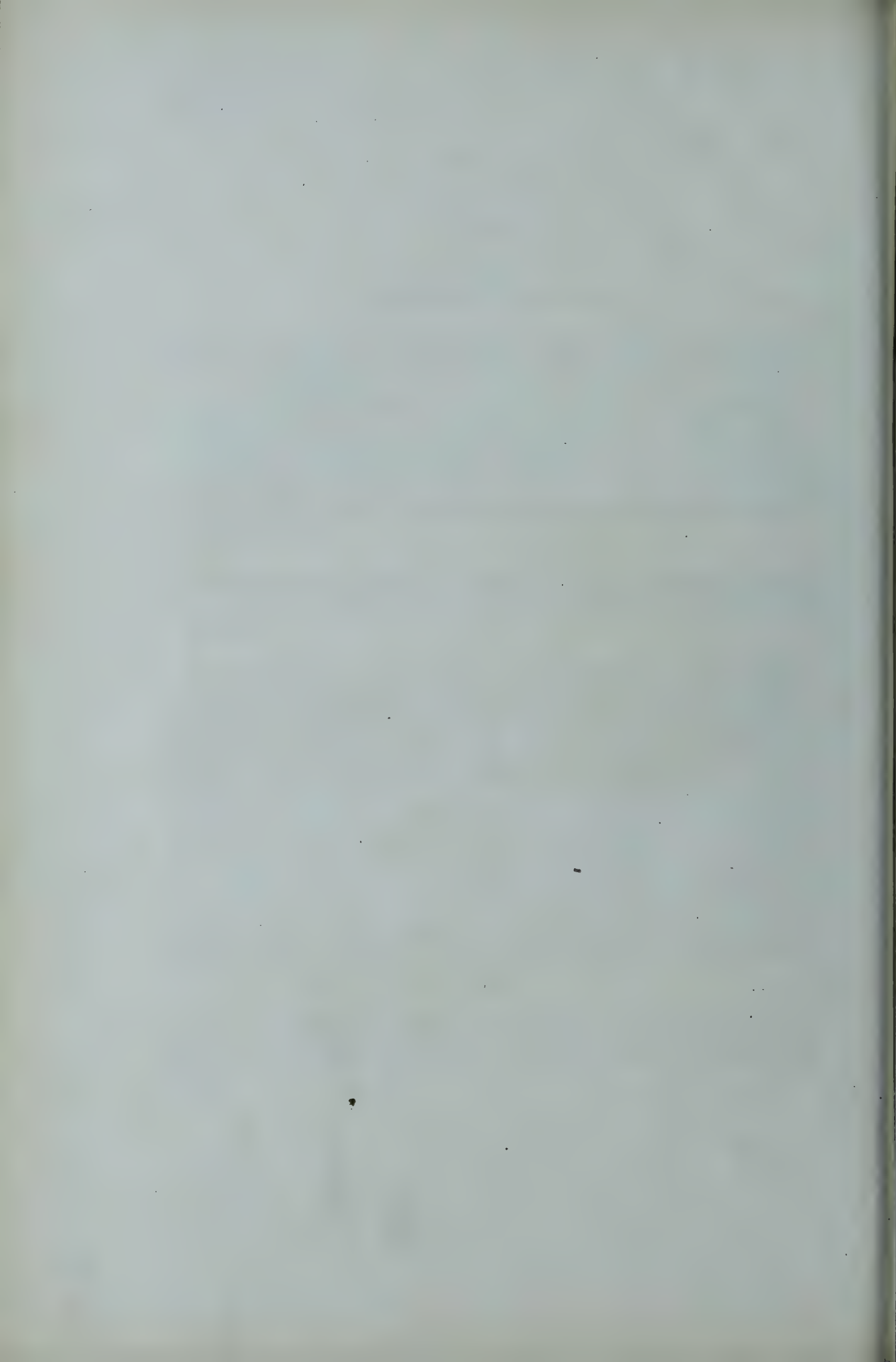
Sori marginales, primum subrotundi, discreti, citissime confluentes et tum lineares continui, margine frondis crenato-plicato revoluto et indusio obtecti. *Indusium* marginarium, lineare, continuum, membranaceo-scariosum, planum aut plicatum. *Sporangia* sessilia v. pedicellata.—*Rhizoma subglobosum aut repens.* Frondes *fasciculatæ aut sparsæ, coriaceæ aut herbaceæ, pinnatim compositæ et supradecompositæ, fertiles pinnulis laciniisque multo angustioribus.* *Venæ pinnatæ, creberrimæ, internæ, tenuissimæ, uni-bi-tri-quadrifurcatæ, venulis parallelis apice clavulato libero terminatis.* *Presl.*

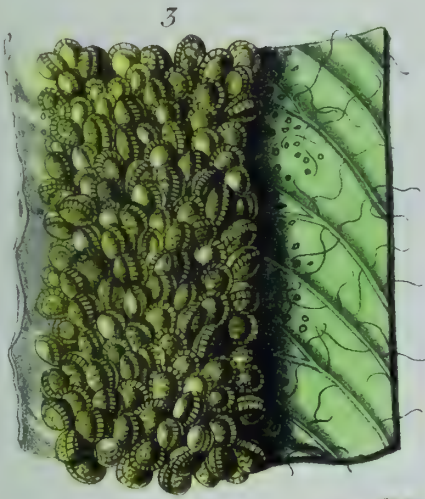
Allosorus hastatus. Presl. (TAB. V.)—Pteris hastata. Sw.—Cheilanthes. Kze. Pteris auriculata. Th.; polymorpha. Poir.; adiantoides. Willd.; hastæfolia. Schrad. (fide Kunzii).

It will require a more accurate examination than I have been able to give to the subject to determine accurately the limits of *Pteris* and the allied genera, and for the present I shall follow Presl, and consider the old *Pteris hastata* illustrative of the genus *Allosorus*; though I must confess that, as it stands in that author, it contains a very heterogeneous assemblage: his first division (ENTYPICI) including several supposed species of *Cheilanthes*, *Onychium*, and *Pteris crispa*, L. The second division (MONOMORPHI), besides other species of *Cheilanthes*, includes our present species and its allies, together with *Jamesonia* Hook. et Gr.; while his third division (AQUILINI) embraces the well marked group of *Pteris aquilina* and its affinities. Kunze observes of our *All. hastatus*: “in planta novella fertili indusium proprium crenulatum et soros invicem remotos, cum illis *Cheilanthis auriculatæ* conformes, observavi. Itaque eodem jure ad *Cheilanthis* genus revocanda videbantur. Attamen mox sori confluunt, et indusia explanatur ita, ut fines inter *Pteridem* et *Cheilanthem* hic fere abolescant.” I may observe that Bory and other authors consider *Allosorus* of Bernhardi the same with *Cheilanthes*.

Fig. 1. Under surface of a pinna; *magn.* 3 diam.—*f. 2.* Upper view of the same; *do.*—*f. 3.* Under surface of a very small portion; *m.* 20 diam.—*f. 4.* Upper view of the same; *do.*—*f. 5.* Transverse section of a sorus; *do.*—*f. 6, 7.* Sporangia in different states; *m.* 100 diam.—*f. 8.* Sporules; *m.* 200 diam.









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TAB. VI.

ASPLENIUM. Presl. ASPL. Spec. L.

Sori lineares, elongati. *Indusium* lineare elongatum e vena lateraliter ortum ducens, planiusculum, margine superiore libero.—*Rhizoma subglobosum*. Frondes *fasciculatæ*, *simplices*, *lobatæ* aut *varie divisæ*. Venæ *pinnatæ*, *simplices* aut *unibifurcatæ* *venulisque parallelæ*, aut *apice libero punctiformi acutove terminatæ*, aut *arcu transverso conjunctæ* (ut in *A. Nidus*).

Asplenium cicutarium. Sw. (TAB. VI.)—*Darea cicutaria*. Sm.

This figure represents one of the group of *Asplenium*, having the fronds much divided, and the segments so narrow as to bear only one vein, and consequently one sorus, to which has been given the name of *Cænopteris*, by Bernhadi, *Darea*, by Sir J. E. Smith; which Mr Brown has clearly shown can by no means be separated, some species having fronds partly answering to *Asplenium* and partly to *Cænopteris*.

Fig. 1. Under surface of a portion of a frond; *nat. size.*—*f.* 2. Upper surface of a small portion; *magn.* 10 diam.—*f.* 3. Under surface of the same; *do.*—*f.* 4. Under view of a small portion of the frond, with a sorus; *m.* 20 diam.—*f.* 5. Upper view of the same; *do.*—*f.* 6. Sporangia; *m.* 100 diam.









TAB. VII.

DANÆA. Sm.

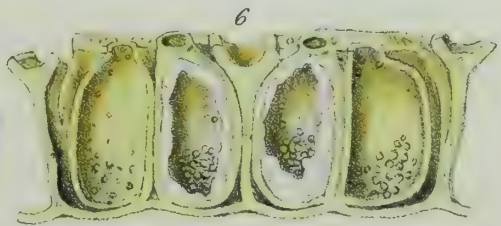
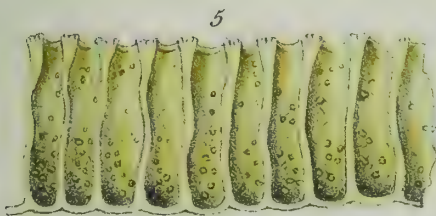
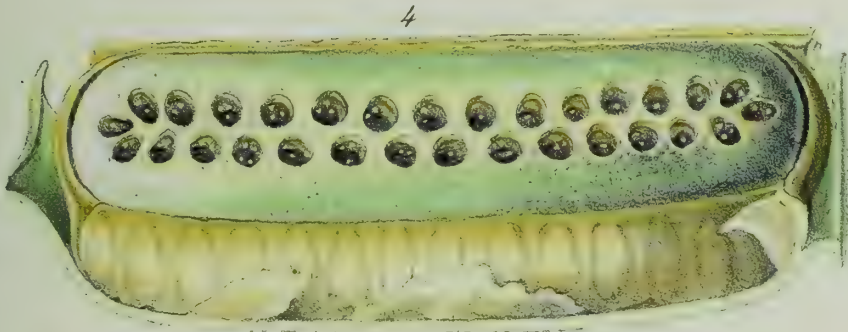
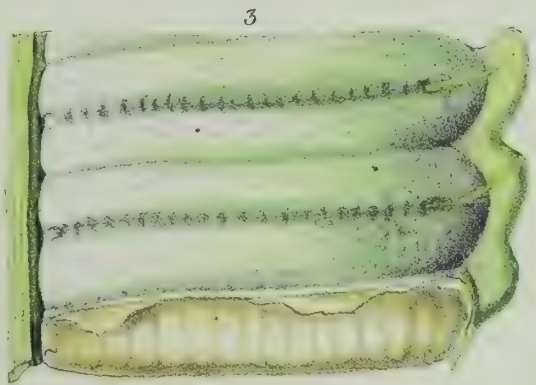
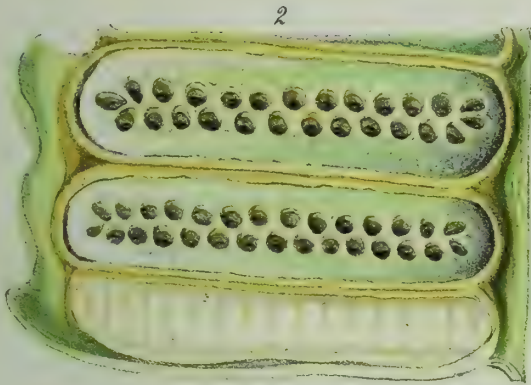
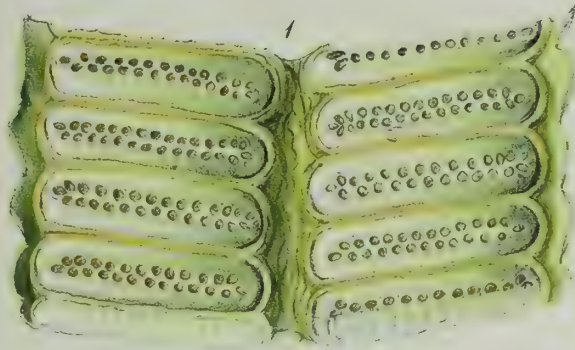
Sori dorsales, totam fere paginam pinnarum tegentes, nervis parallelis insidentes. Indusium coriaceum, oblongum, transversum, multiloculare; loculis biserialibus, sporangiferis, poro dehiscentibus: sporangiis oblique ovatis, exannulatis, ore contracto. Sporulæ minutissimæ, globosæ, muriculatæ.—Filices tropicæ ex America meridionali. Caudex longus, repens. Frondes simplices v. pinnatæ subcarnoso-coriaceæ, siccitate fragiles et nigricantes. Rachis sæpius nodosa, nunc alata. Pinnæ fertiles sterilibus minores. Venæ pinnatæ; venulæ parallelæ transversales, simplices vel furcatæ.

Danæa alata. Sm. (TAB. VII.)—Hook. et Grev. Ic. Fil. t. 18.

The real structure of the fructification of this genus is difficult to be understood. It would appear from Mr Bauer's admirable analysis, that, beneath the epidermis, upon each transverse nerve of the fertile pinnæ, a sorus is formed, surrounded by a peculiar covering which I here consider the indusium, eventually opening with a double line of pores, each pore communicating with a number of transverse chambers or cells, and each chamber having 2 (for there does not appear to be a dissepiment between them) sporangia, obliquely oval, that is flat on their inner side, convex on their outer, fixed to the nerve by a point at the inner base, contracted and a little prolonged at the mouth, which opens at the pore of the indusium. These indusia are so crowded as to occupy the whole under side of the pinnæ, but not reaching to the costa in the middle, nor to the edge on the margin, where there is constantly a wing-like border.

Fig. 1. Portion of the under side of the fertile frond; magn. 8. diam.—f. 2. A small portion of the same; m. 15 diam.—f. 3. The upper side of the same; do.—f. 4. Single sorus; m. 25 diam.—f. 5. Longitudinal section of an indusium; do.—f. 6. Transverse section of f. 2. shewing the sporangia in the cells, with their sporules; do.—f. 7. Sporules; m. 400 diam.





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TAB. VIII.

DIDYMOCHLÆNA. Desv.

(MONOCHLÆNA. Gaudich. TEGULARIA. Reinw.)

Sori apici venulæ simplicis vel furcatæ inserti, elliptici, subimmersi. *Indusium* membranaceum, ellipticum, medio disco longitudinaliter receptaculo affixum, utrinque liberum, et quasi duplex.—Felix *Brasiliensis*. Caudex arboreus. Frondes fasciculatæ, amplissimæ, stipitatæ, bipinnatæ. Pinnulæ subcoriaceæ, oblongo-ellipticæ, basi oblique cuneatæ, sinuato-crenatæ, versus marginem punctato-glandulosæ, radiatim venosæ; venæ simplices vel furcatæ, indistinctæ. *Sori* prope marginem inserti.

Didymochlæna sinuosa. Desv. (TAB. VIII.)

A very distinct genus, confined, however, to a solitary species, which is rather variable in the shape of its pinnules. Presl refers to it, as synonyms, *D. squamata* and *D. lunulata*, Desv., *Asplenium ramosum*, Poir., *Tegularia adiantifolia*, Reinw., *Aspidium truncatulum*, Sw., *Asp. squamatum*, Willd., *Asp. cultratum*, Presl, and *Diplazum pulcherrimum*, Raddi.—Opposite to the immersed sori on the upper surface of the pinnules, is a corresponding swelling, with a sunken line in the centre, answering to the situation of the receptacle. The sporules are triangular, with a triangular cavity.

Fig. 1. Under side of 2 pinnules; *magn.* 4 diam.—*f.* 2. Upper surface of a pinnule; *do.*—*f.* 3. Portion of the same; *m.* 6. diam.—*f.* 4. Under side of the same; *do.*—*f.* 5. A sorus; *m.* 12 diam.—*f.* 6. The same, more advanced; *do.*—*f.* 7. The same, with the indusium removed; *do.*—*f.* 8. Transverse section of a perfect sorus; *do.*—*f.* 9. Sporangia; *m.* 100 diam.—*f.* 10. Sporules; *m.* 400 diam.







TAB. IX.

ALSOPHILA. Br. Presl.

CYATHEÆ, Sp. Auct. CHNOOPHORA. Kaulf. ALSOPHILÆ; Sect. II. HAPLOPHLEBIA, et III. DICRANOPHLEBIA. Mart.

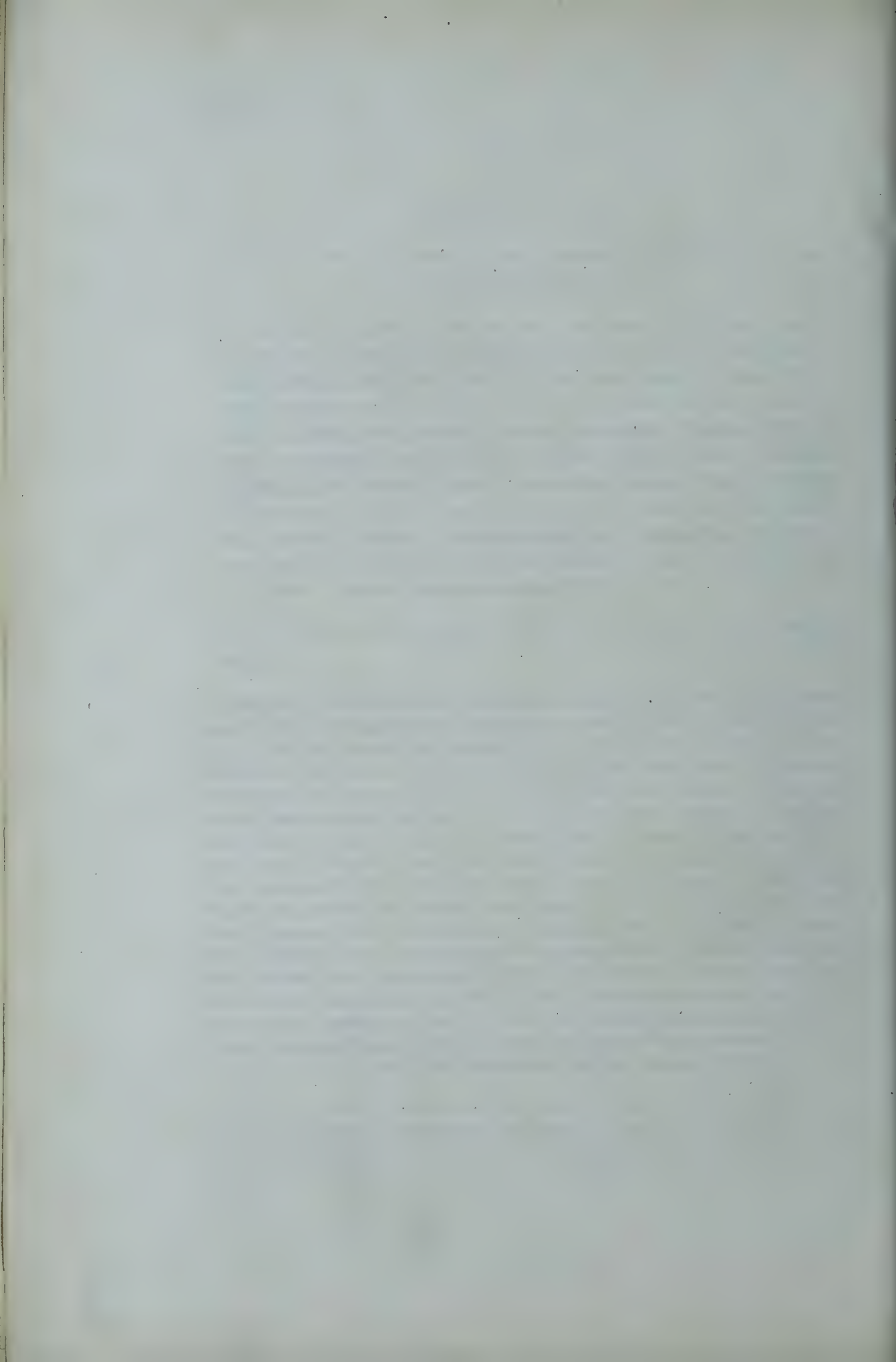
Sori in medio dorsi venarum simplicium, aut in ima basi (ala) furcaturæ venarum, globosi, nudi. *Receptaculum* globosum vel elongatum, pilosum. *Sporangia* densissime imbricata, pedicellata, parva.—*Arbores* (unica species herbacea, A. pruinata), præcipue tropicæ. *Caudex* teres aut irregulariter angulatus. *Cicatrices stipitum* in ordine spirali senario ($\frac{1}{6}$), remotæ, ovato-oblongæ, in apicem acutum productæ, concaviusculæ; verrucis externis in orbem, internis in arcum semilunarem dispositis, superioribus binis, lacunis infra cicatricem maximis. *Frondes* herbacæ, supradecompositæ, amplæ. *Venæ* pinnatæ, infra prominulæ, inferiores uni-bifurcatæ, superiores simplices, aut omnes simplices, venis divergentibus. *Capsulæ* in soris adhuc clausis arctissime imbricatim incumbentes, quemadmodum squamæ coni Coniferarum. *Pedicelli capsularum* demum excrecentes. Presl.

Alsophila excelsa. Br. Prodr. p. 158, in not. (TAB. IX.)—Endlich. Prodr. Fl. Norfolk, p. 16.

Specimens of this noble species, an inhabitant of Norfolk island, which I have received from Mr Allan Cunningham, were taken from trees which had attained a height of 50 feet.

The genus is an extensive one, and many of the species, on account of the absence of an indusium, (as the genus is now restricted by Presl,) have been referred to *Polypodium*. Presl divides them into two groups: §. I. *Venæ simplices, rarius una alterave furcata; sori in dorso medio venarum simplicium*; including *A. atrovirens*, Pr.; *infesta*, Kze.; *armigera*, Kze.; *pycnocarpa*, Kze.; *compta*, Mart.; *procera*, Kaulf.; *arbuscula*, Pr.; *pungens*, Kaulf.; *radens*, Kaulf.; *Weigeltii*, Roem.; *multiflora*, Pr.; *gigantea*, Pr., and *australis*, Br.—§. II. *Venæ uni-rarius bifurcatæ, superiores furcatæ, sori in basi (ala) furcaturæ*; to which belong, besides our *A. excelsa*, Br., *A. villosa*, Kze.; *ferox*, Pr.; *Pohlîi*, Pr.; *speciosa*, Pr.; *hirta*, Kaulf.; *tomentosa*, Kaulf.; *munita*, Kaulf.; *plagiopteris*, Mart.; *Schiediana*, Pr.; *aspera*, Hook. et Grev.; *armata*, Pr.; *Mexicana*, Mart.; *phalerata*, Mart.; *leucolepis*, Mart.; *nigra*, Mart.; *rigidula*, Mart.; *Manilensis*, Pr.; *Hænkei*, Pr.; *lunulata*, Br.; *Wallichiana*, Pr.; *latebrosa*, Pr.; *extensa*, Br.; and *pruinata*, Kaulf.—This last has indeed a very distinct habit: copious specimens are sent of it from Chili and Juan Fernandez, and I have received it also from Buenos Ayres and Jamaica. The other species have in many instances a great similarity one with another, so that their limits are difficult to be defined.

Fig. 1. Under side of a small portion of a frond; magn. 10 diam.—f. 2. Upper surface of a lacinia; do.—f. 3. Under surface of a small portion of the same; m. 30 diam.—f. 4. A perfect sorus; m. 60 diam.—f. 5. Vertical section of the same; do.—f. 6. Transverse section of the receptacle of the sorus; m. 60 diam.—f. 7. Sporangia in various stages; m. 100 diam.—f. 8. Sporules; m. 400 diam.





TAB. X.

ANGIOPTERIS. Hoffm.

Sori in venis ante apicem inserti, in lineam submarginantem confluentes, nudi. *Sporangia* obovata, exannulata, emarginata, subcoriacea, reticulata, duplici serie disposita, primum connata, demum distincta, poro oblongo antice dehiscentia. *Sporulæ* globosæ, læves, obscure reticulatæ. *Receptaculum* lineare, depressum, fimbriato-pilosum.—Filices *Indiæ Orientalis*, *insularum adjacentium*, et ex *insulis Pacificis*. *Caudex perfectus maximus*, depressus, placentiiformis, periphæria 3 ad 6-pedalem (Wall. Mst.). *Frondes stipitatæ, bipinnatæ*. *Pinnæ elongatæ, carnosocoriacæ, serratæ, siccitate fragiles; costa utrinque prominula*. *Venæ pinnatæ, simplices, vel furcatæ, parallelæ, in dentem marginis productæ, nunc linea gracilis pellucida* (præcipue in *A. longifolia*, Hook. et Grev.) cum iis alternans.

Angiopteris evecta. Hoffm. (TAB. X.) Hook. et Grev. *Ic. Fil. t. 36. in Bot. Misc. v. 3. p. 227.*—*A. Indica*. Desv.—*A. crassipes*. Wall. *Cat. n. 187.*

Two certain species only are at present known of this genus, the *A. evecta* and *A. longifolia*, Hook et Grev. Bot. Misc. p. 227.

Fig. 1. Under surface of a small portion of a pinnule; *magn.* 4 diam.—*f. 2.* Another lesser portion of the same; *m.* 12 diam.—*f. 3.* A sorus; *m.* 25 diam.—*f. 4.* Longitudinal section of the same; *do.*—*f. 5.* Transverse section of a sorus, showing two of the sporangia; *do.*—*f. 6.* Receptacle, from which the sporangia are removed; *do.*—*f. 7.* Front, back, and side view of sporangia; *m.* 50 diam.—*f. 8.* Sporules; *m.* 400 diam.—*f. 9.* Hairs from the receptacle of the sporangia (at *f. 6.*); *m.* 50 diam.



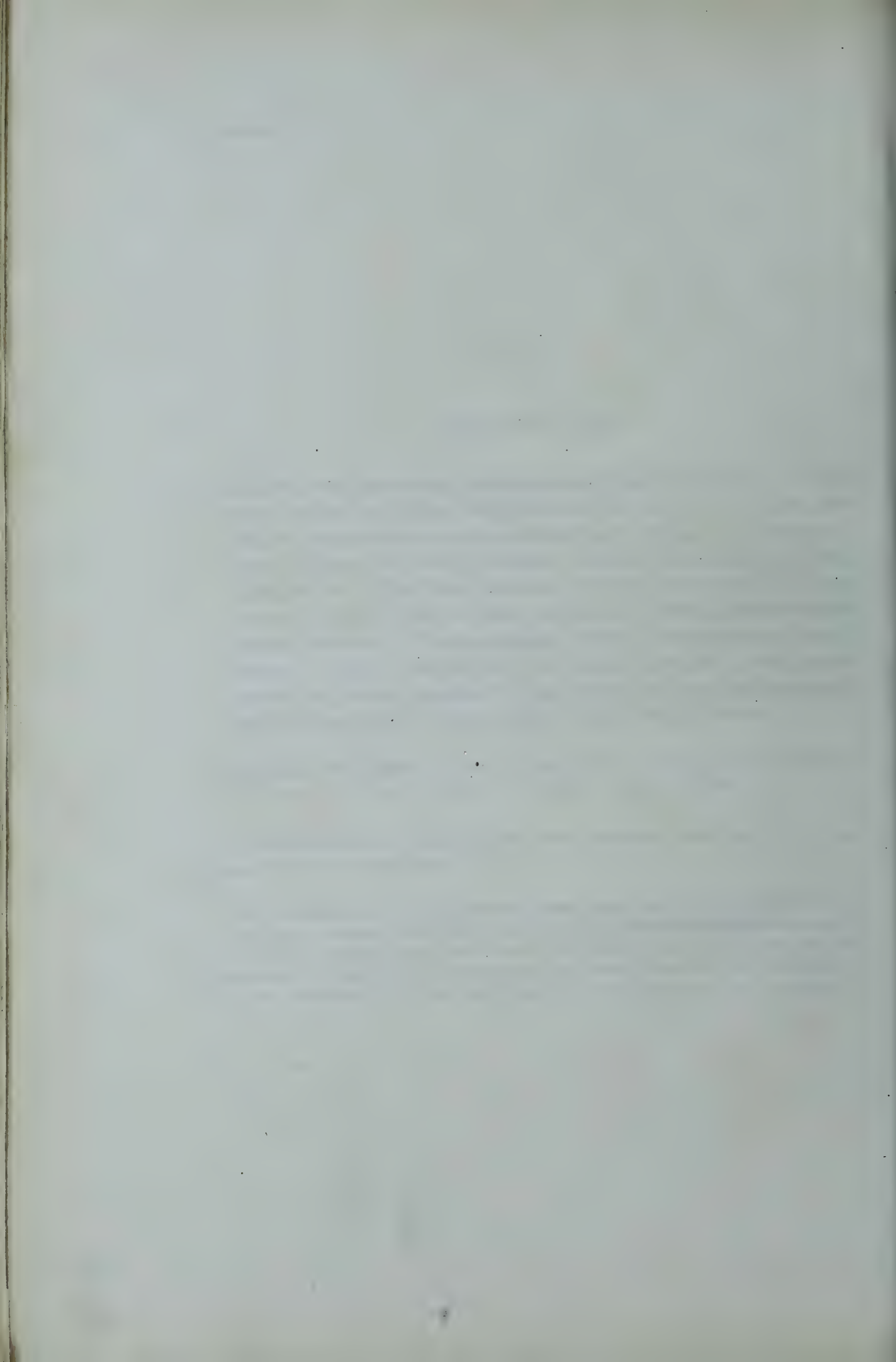
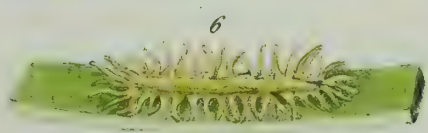
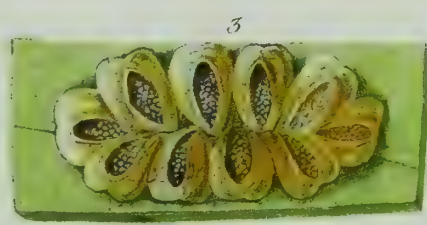


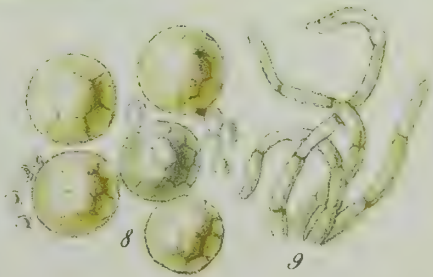
Fig. 1.



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TAB. XI.

ONYCHIUM. *Kaulf.*

LEPTOSTEGIA. *Don.* ALLOSORI SPEC. *Presl.*

Sori lineares vel oblongi solitarii, in maculas dispositi, vel totam pinnulam occupantes. *Indusia* linearia, membranacea, marginalia vel submarginalia, per paria opposita et conniventia, sutura longitudinali quasi dehiscentia. *Sporangia* pedicellata, receptaculo marginali ad basin indusii inserta.—Filices *Indiæ Orientalis*, (*unica Capensis*,) *cæspitosæ*, *graciles*. Frondes *stipitatæ*, *decomposito-pinnatifidæ*, *laciniis angustis uninerviis*, *in partem fructificantem solummodo pinnatim venosæ*, *venis simplicibus ad marginem attingentibus et ibi confluentibus*, *receptaculum sporangiorum formantibus*.

Onychium lucidum. (TAB. XI.)—*Cheilanthes lucida*. *Wall. in Herb.* 1823. *Cat. n.* 69.—*Leptostegia lucida*. *Don, Prodr. Fl. Nep. p.* 14.

Other species of this genus are *Onychium auratum*, (probably the same with *Pteris chrysocarpa*, *Hook. et Grev. Ic. Fil. t.* 107, which is *Lomaria aurea*, *Wall. Cat. n.* 38, and *L. caruifolia*, *Wall. Cat. n.* 39,) *Cheilanthes contigua*, *Wall. Cat. n.* 72, *Onychium Capense*, *Kaulf.* (fide *Kaulf.*), and a species in Captain Carmichael's Herbarium, in my possession, marked *Lomaria microptera*, *Br.* All these are united by a natural habit, although the fructified portions of *O. auratum* and *micropterum* are pinnated, and the pinnæ wholly occupied by the sorus, whilst the barren portions are pinnatifidly divided, like the entire plant in the other species, in which latter, moreover, the sorus occupies but a portion of the lacinia, and the indusia are inserted, partially at least, a little within the margin. Still *Presl* may be correct in uniting *Onychium*, or at least the *O. auratum*, with *Allosorus*. In all, I find the fructified portion to give out pinnated veins (apparently overlooked in *Mr Bauer's* otherwise excellent figure) as in *Allosorus crispus*, *Pr. (Cryptogamma, Br.)*—these, however, do not immediately bear the sporangia, but appear to unite at or very near the margin into a longitudinal receptacle or marginal vein, on which the sporangia are situated.

Fig. 1. Under side of a portion of the frond; *magn.* 3 diam.—*f. 2.* Smaller portion of do; *m.* 10 diam.—*f. 3.* Upper side of the same; *do.*—*f. 4.* Section of a lacinia, with a portion of the sorus; *m.* 25 diam.—*f. 5.* Sporangia in various stages; *m.* 100 diam.—*f. 6.* Sporules; *m.* 200 diam.





TAB. XII.

CERATOPTERIS. Brongn.

TELEOZOMA. Br. ELLEBOCARPUS. Kaulf. FURCARIA. Desv. ACROSTICHI Sp.
Linn. PTERIDIS Sp. Beauv.

Sori continui, venas longitudinales frondis occupantes. Sporangia laxè disposita, globosa, hyalina, annulo latissimo incompleto $\frac{2}{3}$ cincta. Indusium membranaceum, continuum, e margine frondis revolutæ ortum, sutura longitudinali dehiscens. Sporulæ obtuse triangulares, seriebus tribus striarum concentricarum notatæ.—Filices *Indiæ Orientalis*, *aquaticæ*, *annuæ*, *succulentæ*, *molles*. Frondes *steriles* (e *fertilibus diversæ*) *bipinnatifidæ*, *segmentis ovatis*, *sinuato-pinnatifidis*, *costatis*, *cellulosis*, *pulcherrime reticulatim venosis*;—*fertiles majores* (*bi-tripediales*) *3-4-pinnatifidæ*, *laciniis linearibus acutis*, *marginibus (indusia formantibus) revolutis*, *costatis*, *reticulatis*; *præter costam venis seu receptaculis sporangiorum 4, longitudinalibus filiformibus*.

Ceratopteris thalictroides. Brongn. (TAB. XII.)—*Acrostichum siliquosum et thalictroides*. Linn.—*Pteris thalictroides*. Sw. Willd.—*Pteris cornuta*. Beauv. *Fl. d'Ow. et de Ben.* p. 63. t. 38.—*Ceratopteris Gaudichaudii*. Brongn. in *Freye. Voy. Bot.* v. 1. p. 393. t. 20.

It appears to me that the *C. Gaudichaudii*, from the Ladrões, is not in reality different from the *C. thalictroides*, which has a very extensive range in the East Indies and adjacent islands. Another species is described from Guiana, the *C. Richardii*, Brongn.:—but may not that be the *Parkeria pteridioides* of Hook. et Grev. *l.c.* Fil. t. 97? an undoubted native of Guiana, and which forms another genus, distinguished in this curious little group of aquatic Ferns by the obsolete annulus of the sporangium.

Fig. 1. A. Under side of a portion of a fertile frond, the indusia spread open; *magn.* 2 diam.—*f. 1. B.* Back; and *f. 1. C.* Front view of small portions of the same, the indusia covering the sori; *m.* 10 diam.—*f. 2.* Small portion of *f. 1. A*; *m.* 20 diam.—*f. 3.* One half of the same, including the costa and two receptacles; *m.* 20 diam.—*f. 4.* Young sporangium; and *f. 5.* Old sporangia; *m.* 100 diam.—*f. 6.* Sporules; *m.* 200 diam.

THE HISTORY OF THE

REIGN OF KING CHARLES THE FIRST

IN THE YEAR 1649

BY JOHN BURNET

OF THE UNIVERSITY OF OXFORD

IN TWO VOLUMES

LONDON, Printed by J. Streater, at the Sign of the Gun, in St. Dunstons Church-yard, 1680.

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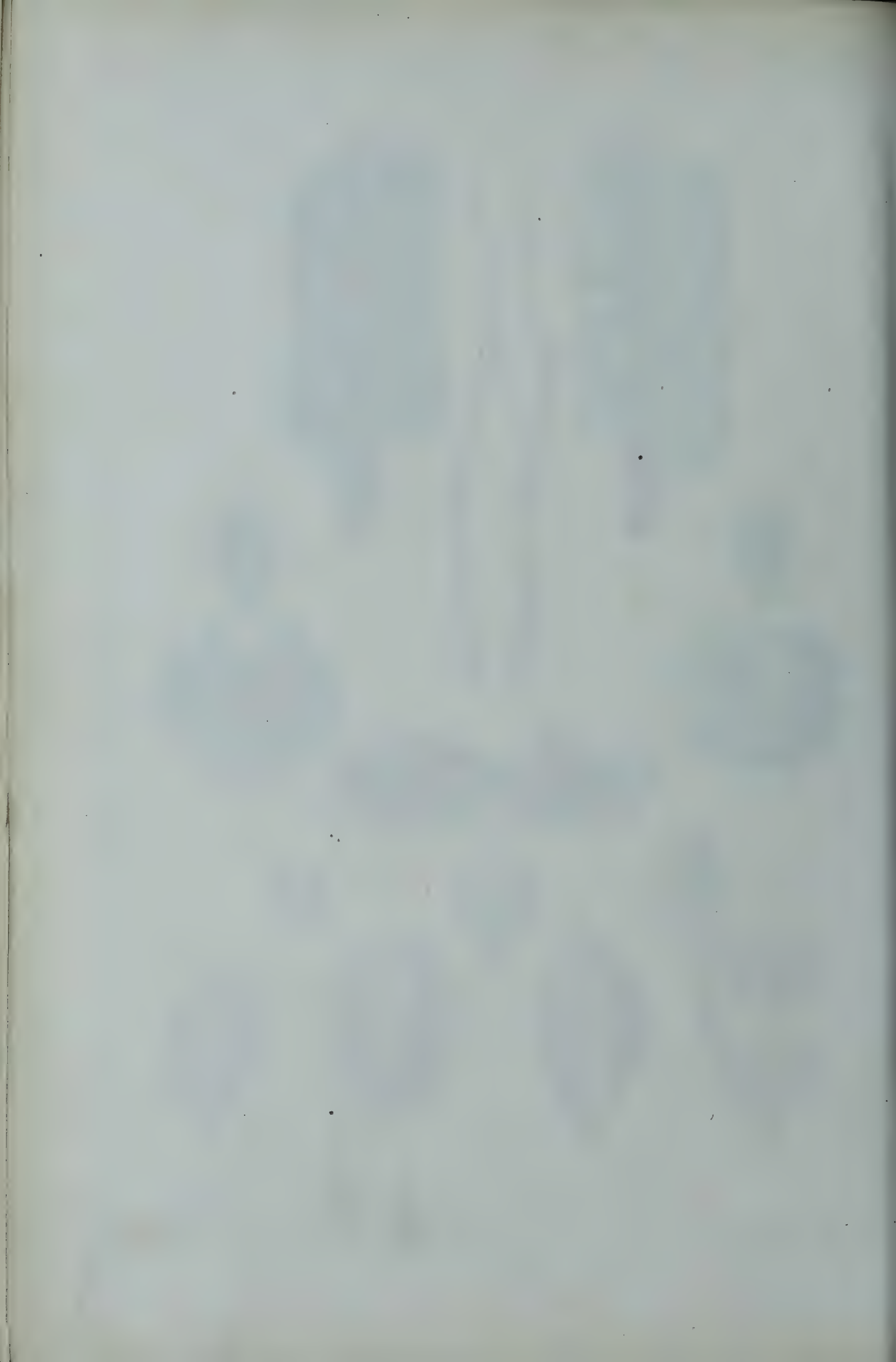
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TAB. XIII.

JAMESONIA. *Hook. et Grev.*

PTERIS. *Cav. Sw.* ALLOSORI *Sp. Presl.*

Sori pauci, parvi, in costam vel venarum prope basin siti demum confluentes. *Sporangia* subsessilia, pilis plurimis articulatis compressis immixta. *Semina* triangularia. *Indusium* continuum membranaceum e margine retroflexo pinnarum, soris remotum.—*Filix australi-Americana, andicola.* Frondes lineares, pinnatæ. Rachis villosa. Pinnæ numerosæ, arctæ, subimbricatæ, coriaceæ, juniores villosissimæ, brevi-petiolatæ, reniformi-cordatæ, supra convexæ, subtus concavæ, costatæ, venosæ, venis paucis dichotomis, ramis ad marginem attingentibus.

Jamesonia imbricata.—*J. pulchra.* *Hook. et Grev. Ic. Fil. t. 178.*—*Pteris imbricata.* “*Cav. Hort. R. Matr. 1. Tab.*” *Sw. Fil. p. 102.*—*Pteris orbiculata.* *Lam. Enc. 5. p. 710.*

A single species only is known of this beautiful genus, which, from the nature of the indusium, without observing the situation of the sporangia, has been referred to *Pteris* and *Allosorus*. The crowded capsules, mixed with copious hairs, do indeed render it difficult to distinguish their precise mode of insertion, and Dr Greville and myself had been led to consider the sorus to be single near the centre of each pinna; but Mr Bauer's dissections, and Mr Smith's investigations, show that there are several small sori, which eventually become confluent.

Fig. 1. Portion of the under side of a frond; *magn.* 5 diam.—*f. 2.* Upper side of the same; *m.* 5 diam.—*f. 3.* Under side of a young pinna; *m.* 10 diam.—*f. 4.* Upper side of the same; *m.* 10 diam.—*f. 5.* Under side of a pinna with perfect sori; *m.* 10 diam.—*f. 6.* Upper side of do.; *m.* 10 diam.—*f. 7.* Transverse section of the same; *m.* 20 diam.—*f. 8.* Sporangia in a young state; *m.* 100 diam.—*f. 9.* The same in a ripe state; *m.* 100 diam.

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TAB. XIV.

MARGINARIA. Bory, Presl.

POLYPODII Sp. Linn. et Auct.

Sori globosi, nudi, (pilis articulatis apice dilatatis vel peltigeris immixti), venulas primarias vel secundarias liberas in maculas hexagonoideas terminantes, in seriem simplicem v. duplicem triplicemve dispositi.—Fronde *variæ, simplices aut pinnatæ, diffformes aut conformes*. Stipites *supra basin articulati*. Venæ *pinnatæ, ramosæ*. Venulæ *superiores cum proximis oppositis in arcus angulatos confluentes et maculas hexagonoideas efficientes, infima e basi v. supra basin venæ inferiores emergens libera apice globoso clavatove sorifera*. Venulæ *secundariæ ex apice arcuum exorientes solitariae, liberæ, apice globuloso clavatove soriferæ, supremæ (seu marginales) ex angulis duobus cujuslibet hexagonii exorientes*. (Presl.)

Marginaria verrucosa.—*Polypodium verrucosum*. Wall. Cat. n. 296.

The figures here given were made by Mr Bauer from a fine pinnated Fern, found by Dr Wallich at Penang and Singapore, with lanceolate pinnæ, a single row of sori on each side the midrib, and these sori sunk in a very deep depression (forming prominent tubercles or warts on the opposite or upper side of the frond), and the sporangia upon long pedicels and mixed with jointed hairs (abortive sporangia?) with swollen apices, some terminated with an articulation formed of 2 or 3 cells, some with a rather large peltate and stellated oblique scale. All these circumstances are beautifully and correctly represented; but it is to be regretted that the venation of the fronds has not, in this instance, received that attention to which the investigations of Brown and Presl, &c. show that it is entitled. If this venation be attentively examined, it will be seen at once to indicate that of the genus *Marginaria* of Bory, a name indeed not very applicable, but whose characters are clearly defined by Presl. These chiefly reside in the hexagonoidal spots, in which is a free veinlet terminated by a sorus. "Sori uniseriales oriuntur (Presl further remarks) si solummodo venulæ in maculis costalibus axillares soriferæ sunt, aut bi-tri-quadriseriales, si quoque venulis secundariis ex apice hexagonii emergentibus insident." The genus is a very extensive one, and we may mention as belonging to it *Polypodium piloselloides*, L., and its allies; *P. amænum*, Wall. Cat. n. 290; *P. argutum*, Wall. Cat. n. 308, according to my specimens (but Presl refers it to *Polypodium*); *P. loricum*, L., &c. &c.

Fig. 1. Portion of the under surface of a pinna; *magn.* 2 diam.—*f.* 2. Upper surface of the same; *do.*—*f.* 3. Small portion, seen from beneath, with a perfect sorus; *m.* 20 diam.—*f.* 4. Upper portion of the same; *do.*—(Obs. In this and the previous figure the veinlet seems to be continued beyond the sorus, which is not the case in my specimens.)—*f.* 5. Lateral view of a vertical section of the same; *do.*—*f.* 6. Sporangia in different stages; *m.* 100 diam.—*f.* 7. Hairs terminated by peltate scales from the sorus; *m.* 100 diam.—*f.* 8. Hairs from the sorus, slightly thickened upwards; *m.* 100 diam.—*f.* 9. Other hairs from the sorus; *m.* 100 diam.—*f.* 10. 10. Sporules; *m.* 200 diam.

THE HISTORY OF THE

REIGN OF

CHARLES THE FIRST
IN WHICH ARE CONTAINED
THE MOST IMPORTANT
EVENTS OF HIS REIGN
FROM HIS MARRIAGE
TO HIS DEATH
BY
JOHN BURNET
BISHOP OF SALISBURY

LONDON: Printed by J. Streater, at the Sign of the Gun, in St. Dunstons Church-yard, 1679.

CHARLES THE FIRST, King of Great-Britain, was born at Windsor, the third of May, 1600. His father, James the First, King of Great-Britain, was then Duke of Rothesay, and his mother, Elizabeth, daughter of Henry the Fourth, King of France. He was educated in the University of Oxford, and in the University of Cambridge. He was married to Henrietta Maria, daughter of Henry the Fourth, King of France, on the 10th of June, 1625. He reigned over Great-Britain, France, and Ireland, from the 27th of March, 1625, to the 30th of January, 1649. He was beheaded on the 30th of January, 1649, at Whitehall, in London. His reign was marked by a series of events, including the English Civil War, the execution of his wife, and his own execution. His death led to the establishment of the Commonwealth of England, and the reign of Oliver Cromwell.

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TAB. XV.

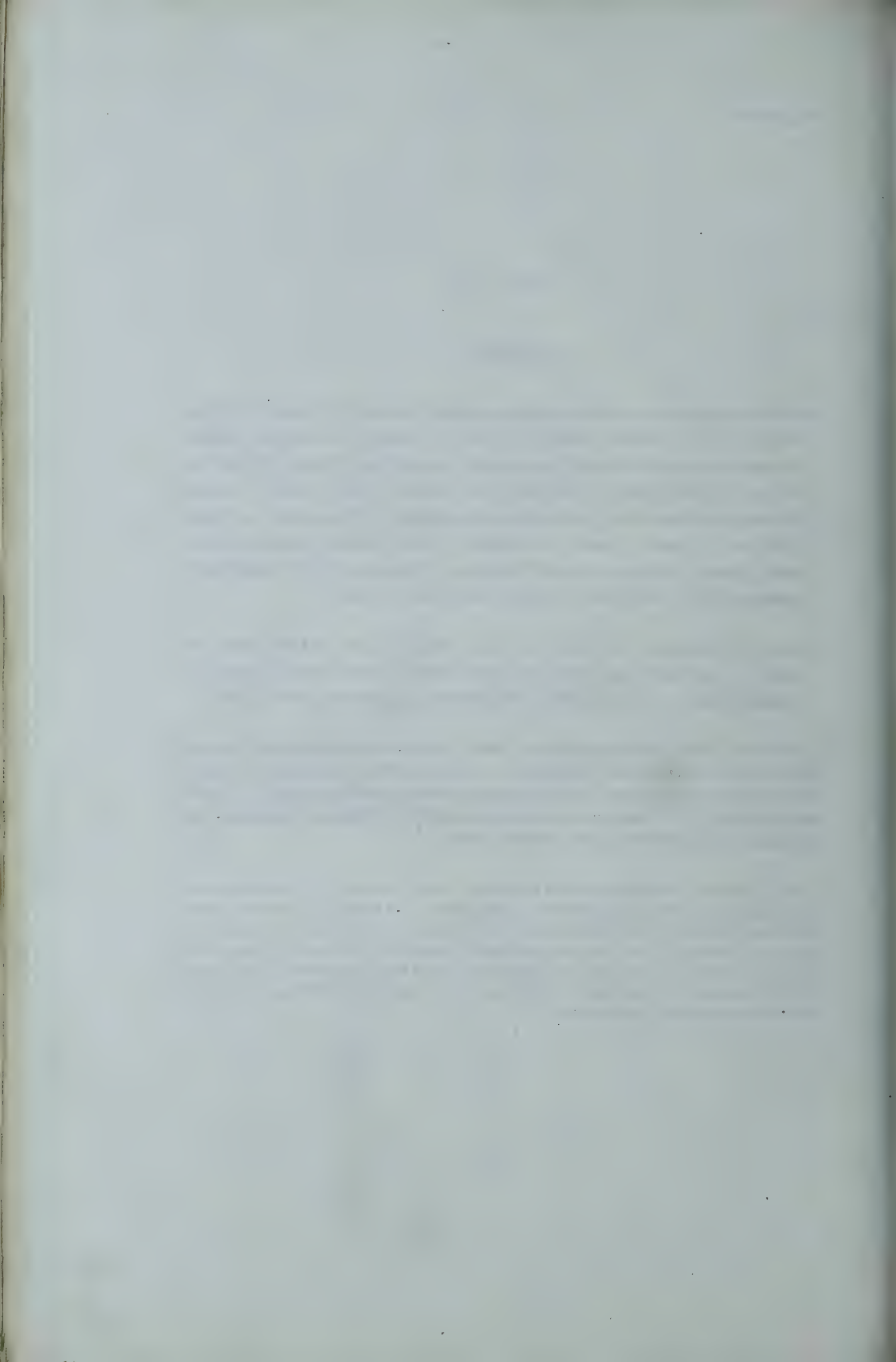
LOXSOMA. *Br.*

Sori subintramarginales in sinibus dentium, frondis venulam terminantes. *Indusium* coriaceum suburceolatum, extus ad apicem dehiscens, ore truncato integro. *Sporangia* receptaculo filiformi longe exserto sita, obovata, oblique annulata, hinc gibbosa, longitudinaliter dehiscentia, pilis articulatis sæpe clavatis immixta. *Sporulæ* triangulares, hinc puncto triangulari impressæ.—*Filix pulcherrima* Novam Zelandiam habitans. Caudex horizontalis. Frons stipitata, coriacea, glabra, subtus glauca, decomposita, laciniis lanceolatis, dentato-pinnatifidis, marginibus in sinibus soriferis, costatis, oblique remote venosis, venis furcatis.

Loxsoma Cunninghamii. *Br. MSS.*—*A. Cunn. Bot. of N. Zeal. in Hook. Comp. Bot. Mag. v. 2. p. 366.* (where by an error it is printed *Loxoma*) *tabs. 31 and 32.*—*Davallia dealbata*. *A. Cunn. MSS.*—*Trichomanes cænopteroides*. *Harv. MSS.*

The aspect of this plant is perfectly *sui generis*; allied, however, on the one hand, to *Davallia*, and on the other to *Trichomanes*; so that Mr Allan Cunningham had, in his MSS., referred it to the former, and Mr Harvey to the latter of these genera. The admirable analysis of Mr Bauer, in the accompanying figure, will illustrate the nature of the fructification much better than can be done by words.

Fig. 1. Portion of the under surface of a fertile frond; *magn.* 3 diam.—*f. 2.* Upper surface of the same; *do.*—*f. 3. 4.* Under and upper side of a young sorus; *m.* 10 diam.—*f. 5.* Transverse section of the same, showing the base of the receptacle; *m.* 10 diam.—*f. 6.* Under side of a perfectly ripe sorus; *m.* 10 diam.—*f. 7.* The same with the indusium removed; *m.* 10 diam.—*f. 8.* Apex of the receptacle, with sporangia and hairs; *m.* 25 diam.—*f. 9.* Upper side of a ripe sorus; *m.* 10 diam.—*f. 10. 10.* Sporangia in different stages; *m.* 100 diam.—*f. 11.* Sporules; *m.* 200 diam.—*f. 12.* Hairs from among the sporangia; *m.* 100 diam.







TAB. XVI.

ATHYRIUM. *Presl.*

ATHYRII Sp. *Roth, Presl.* ALLANTODIA. *Br. Kaulf.* DAREÆ Sp. *Willd.*

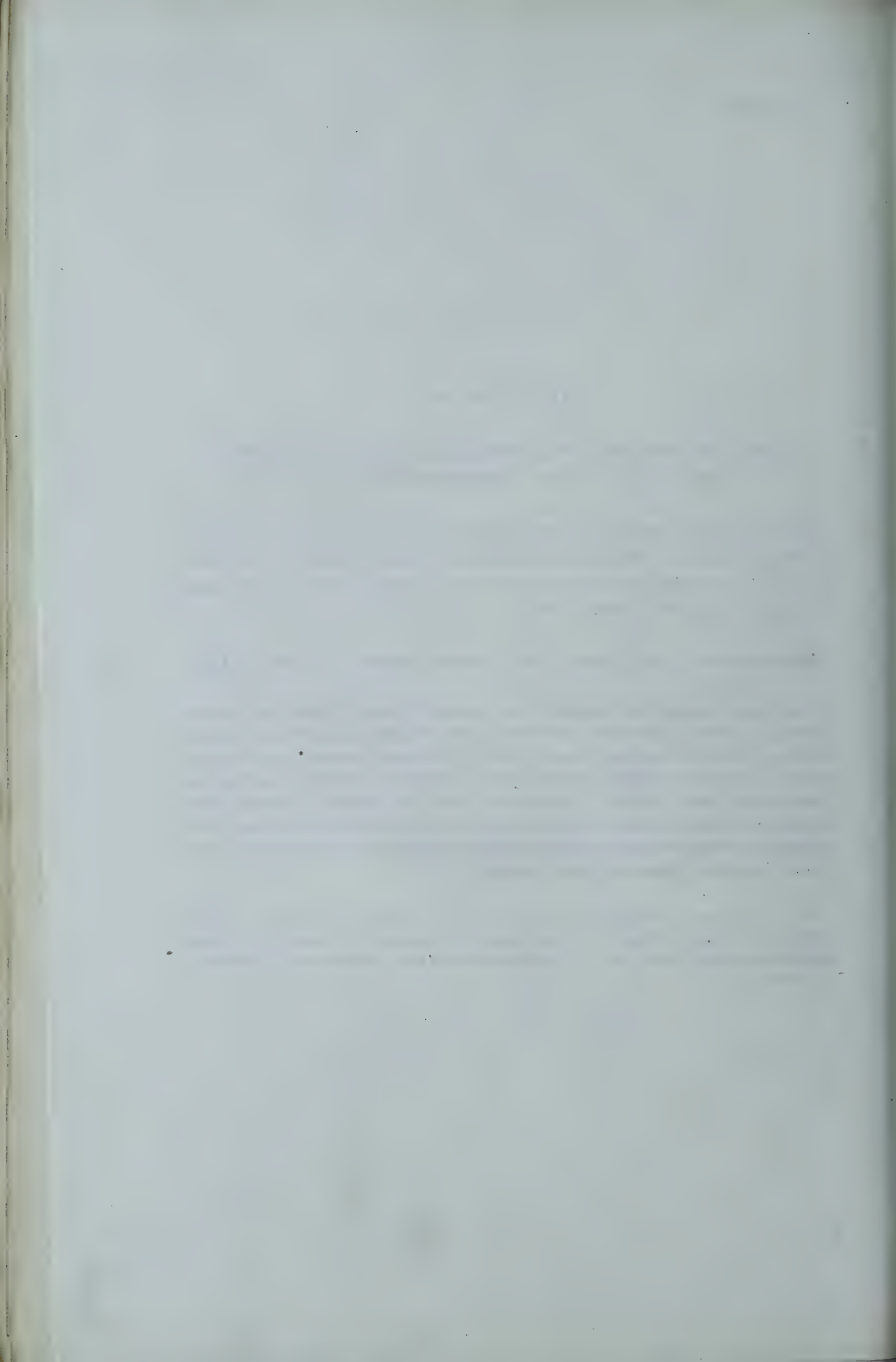
ASPIDII Sp. *Sw. et Auct.* NEPHRODIUM. *Rich. in Mich.*

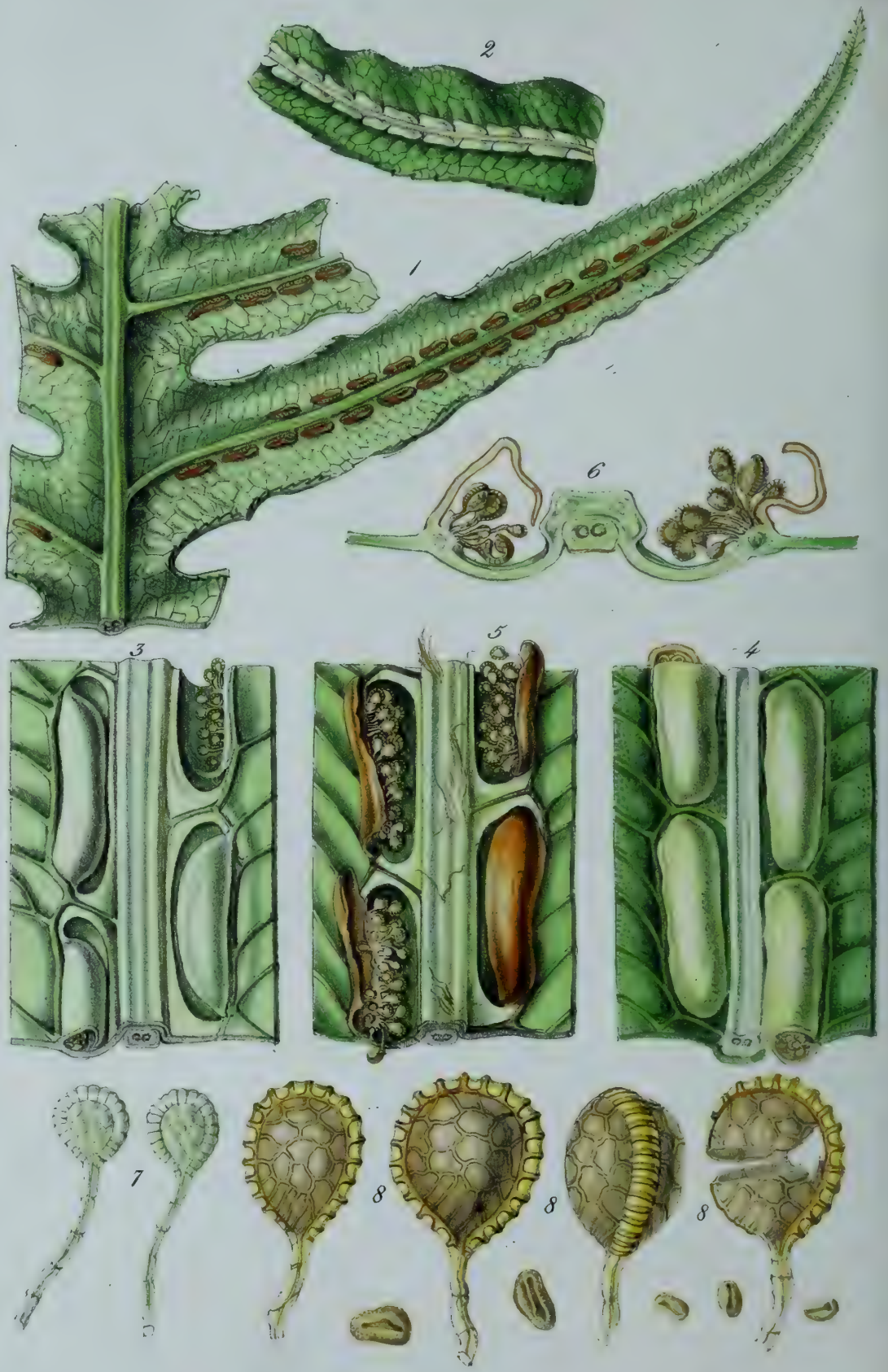
Sori oblongi, breves, incurvi aut inflexi, rarius recti, medio venarum inserti. *Indusium* oblongum, inflato-convexum, demum reflexum.—*Rhizoma subglobosum.* Frondes fasciculatæ, herbacæ, pinnatim divisæ. Venæ pinnatæ, internæ, tenues, simplices, medio dorso soriferæ. *Presl.*

Athyrium australe. Presl, Pterid. p. 98.—Allantodia australis. Br. Prodr. p. 149.

The Australian plant here represented was, together with another species from the same country (*A. tenerum*), referred by Mr Brown to his new genus *Allantodia*, the essential character of which he considered to consist in the “*Involucrum fornicatum e vena lateraliter ortum, eique utroque margine insertum, interiore dehiscente.*” Kaulfuss has, however, perhaps with justice, referred it to *Athyrium*, along with *Aspidium fontanum*, *Filix fœmina*, *asplenioides*, *umbrosum*, &c. of Sw., and several *Asplenium* of other Authors. But the genus is perhaps too closely allied to *Asplenium*, differing scarcely in any thing but the shorter, inflated, and frequently curved indusium.

Fig. 1. Under surface of a portion of a fertile frond; *magn.* 2 diam.—*f. 2.* Segment of a young frond, under side; *m.* 10 diam.—*f. 3.* Similar portion in a ripe state; *m.* 10 diam.—*f. 4.* Vertical section of a ripe sorus; *m.* 20 diam.—*f. 5.* Sporangia in various states; *m.* 100 diam.—*f. 6.* Sporules; *m.* 400 diam.







TAB. XVII.

WOODWARDIA. Sm.

Sori venis transversis macularum costalium inserti, lineares, immersi, costæ contigui. *Indusium* lineare, fornicatum, coriaceum, sorum involvens.—*Rhizoma subglobosum*. Frondes fasciculatæ, coriaceæ aut herbaceæ, dissimiles. Venæ internæ, tenues, ramosissimæ, in maculas inæquales anastomosantes, maculis costalibus, elongatis, costæ parallelis, mediis hexagonoideis ad angulos superiores externos venulas liberas furcatas simplicesque gerentibus. Presl.

Woodwardia radicans. Sw. *Syn. Fil.* p. 117.

A small but very handsome genus, which, as circumscribed by Presl, nevertheless constitutes two groups with that author. § I. *Frons coriacea, fertilis non dissimilis*. *Sori breves*;—including, besides our *W. radicans*, Sw., *W. stans*, Sw.; to which may be added, *W. prolifera*, Hook. et Arn. in *Bot. of Beech. Voy.* p. 275. t. 57. § II. *Frons herbacea, fertilis dissimilis*. *Sori longiores*;—including two N. American species, *W. angustifolia*, Sm. (*W. onocleoides*, Willd.), and *W. thelypteroides*, Ph.

W. Virginica, Sw., is, by Presl, referred to *Doodia* of Brown, which, he observes, only differs from *Woodwardia* in the veins and veinlets being prominent on the under side, the sori rather remote from the costa, not immersed nor linear, and in the flat, not fornicate, indusium.

Fig. 1. Portion of the under side of a fertile frond; *magn.* 2 diam.—*f.* 2. Smaller portion of the upper surface; *m.* 2 diam.—*f.* 3. A very small portion of the under surface, with young sori;—*m.* 10 diam.—*f.* 4. Upper surface of the same; *m.* 10 diam.—*f.* 5. A similar portion of the under surface with ripe sori; *m.* 10 diam.—*f.* 6. A transverse section of the same made through the sori; *m.* 20 diam.—*f.* 7. Young sporangia.—*f.* 8. 8. 8. Old sporangia and sporules; *m.* 100 diam.

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TAB. XVIII.

PLEOPELTIS. *Humb. et Bonpl.*

POLYPODII Sp. *Auctorum.*

Sori globosi, magni, uni-pluriseriales. *Sporangia* creberrima. *Pedicelli* sporangiis delapsis persistentes, pulvinulum magnum hemisphæricum efformantes. *Receptaculum* punctiforme, maximum.—*Rhizoma repens*. *Frondes* sparsæ, crasse coriaceæ immo carnosæ, aut simpliciter coriaceæ aut herbaceæ, simplices, rarius pinnatifidæ. *Venæ internæ*, persæpe tenuissimæ, ramosæ, venulisque apice obtuso libero aut maculis irregularibus desinentes. *Venulæ* in maculas hexagonoideas vel octogonoideas anastomosantes, maculis mediis magnis interne venulas secundarias duas-plures maculam oblongam simplicem vel e pluribus compositam apice soriferam efficientes continentibus. *Presl.*

Pleopeltis nuda. *Hook. Exot. Fl. t. 63.*

We have elsewhere remarked (*Icones Filicum*, t. 67, under *Pleopeltis percussa*, Hook. et Grev.), that the so-called involucres of the genus *Pleopeltis* are only pedicellated scales, such as are frequently found sessile on the under surface of the frond, remote from the sori, in the same way as the stellated scales of *Niphobolus* become pedicellated among the sori; and we had considered that the genus should merge into *Polypodium*. *Presl* has, however, retained the genus, making the character to depend mainly on the venation, which is unfortunately, in many species, so delicate, and so concealed within the thickened substance of the frond, as to be extremely obscure. It is well represented in the *Pleopeltis percussa*, Hook. et Grev., above cited, where the veins are more apparent than in the present species. The species of the genus are numerous, chiefly tropical. In many, the sori are immersed, and form a scar on the corresponding opposite side of the frond, as beautifully shown in Mr Bauer's figures.

Fig. 1. Portion of the under surface of a fertile frond; *magn.* 2 diam.—*f. 2.* Upper surface of the same; *do.*—*f. 3.* Small portion of the under surface, with a ripe sorus; *m.* 15 diam.—*f. 4.* The same, with most of the pedicellate scales removed; *do.*—*f. 5.* Upper surface of the same; *do.*—*f. 6.* Vertical section of a ripe sorus; *m.* 15 diam.—*f. 7.* 7. *Sporangia* in different stages; *m.* 100 diam.—*f. 8.* 8. Peltate scales from the sorus; *m.* 50 diam.—*f. 9.* 9. *Sporules*; *m.* 400 diam.





TAB. XIX.

SCHIZÆA. Sm. Sw.

Sporangia ovalia, sessilia, vasculoso-reticulata, apice annulata vel radiatim striata, hinc longitudinaliter dehiscencia, unilateralia bi-seu quadriselia, in appendicibus linearibus flabellatis vel pinnatis plerumque pilosis disposita. *Indusium* e marginibus inflexis formatum, intus liberum.—Fronde *cæspitosæ*, *lineares rarius flabelliforme latæ*, *simplices vel dichotomæ*, *plerumque compressæ*, *costatæ*, *vel, in speciebus frondibus latioribus, venosæ*, *venis numerosis parallelis elongatis, basi solummodo dichotomis*.

Schizæa dichotoma. Sw. *Syn. Fil.* p. 150. *Br. Prodr. Fl. Nov. Holl.* p. 162. *Hook. et Grev. Ic. Fil.* t. 17.—*Acrostichum dichotomum*. *Linn. Sp. Pl.* p. 1525.—*Ripidium dichotomum*. *Bernh.*

A singular and very beautiful and very distinct genus, of which the species have a very extensive range in both hemispheres. The most northern limit of any species is New Jersey in N. America. In the south, they extend to the Cape of Good Hope and Van Diemen's Land.

Fig. 1. Extremity of a fertile frond; *magn.* 5 diam.—*f. 2.* Inner view of a portion of the appendages; *m.* 10 diam.—*f. 3.* Outer view of a smaller portion of the same.—*f. 4.* Single appendage, inner view; *m.* 20 diam.—*f. 5.* Transverse section of the same; *do.*—*f. 6.* 6. Sporangia in a ripe state; *m.* 100 diam.—*f. 7.* Sporangia bursting; *m.* 100 diam.—*f. 8.* 8. Sporules; *m.* 400 diam.





TAB. XX.

BALANTIUM. Presl.

BALANTII et CIBOTII Sp. Kaulf. DICKSONIÆ Sp. L'Herit. DAVALLIA Sp. Br.

Sori globosi, marginales, apice venæ venulæve insidentes. Indusium cartilagineum, coriaceum vel herbaceum, bivalve, valvulis dissimilibus patentibus; verum semilunare; accessorium operculiforme, convexum. Receptaculum globosum, magnum, hispidum.—Frondes fasciculatæ aut tenuiter coriaceæ, amplæ, pinnato-decompositæ. Venæ pinnatæ, supra immersæ, subtus elevatæ, crassiusculæ, inferiores (sæpe) furcatae, venulisque superioribus apice soriferæ. Presl.

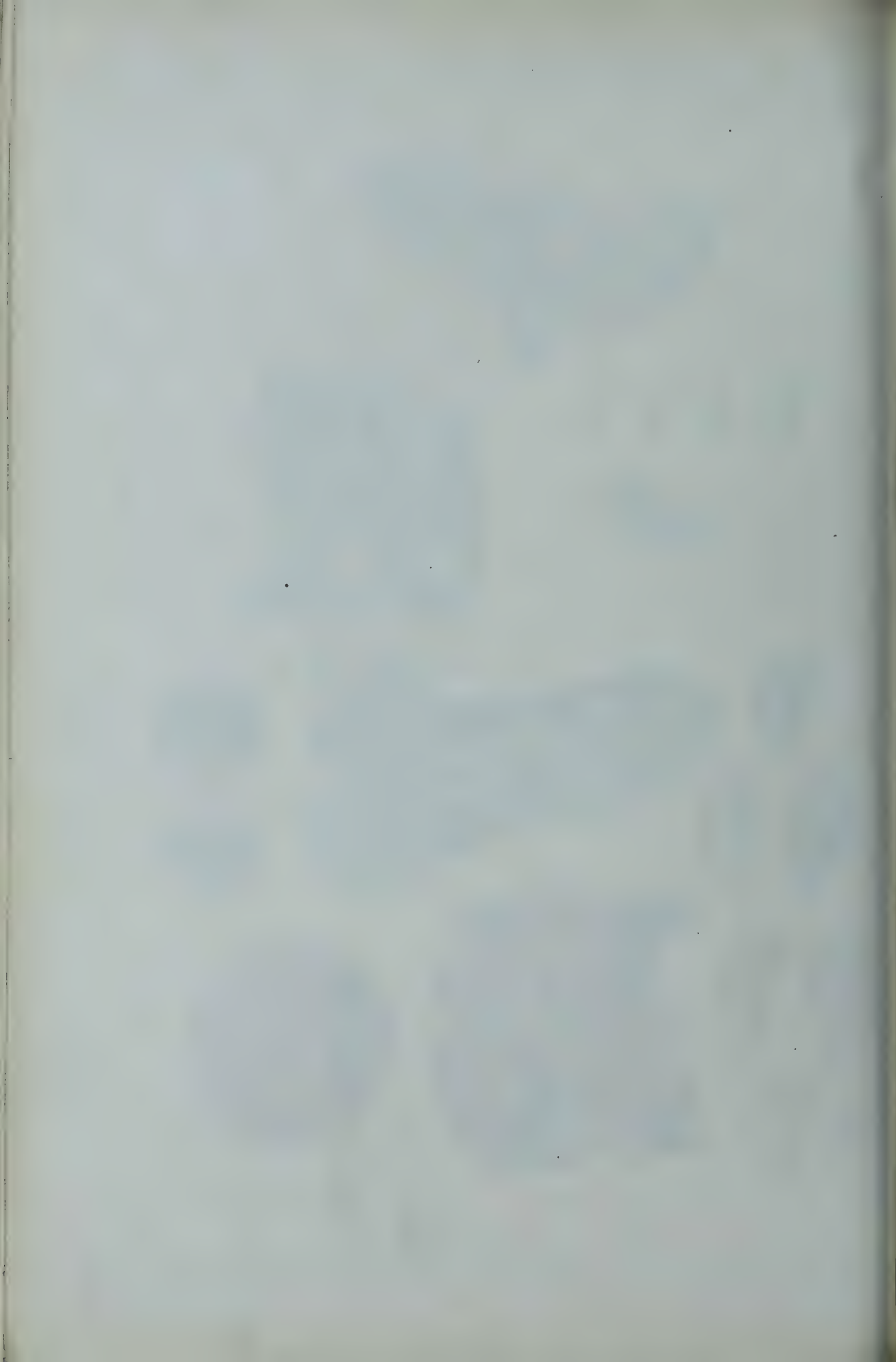
Balantium arborescens.—*B. auricomum*. Kaulf. Enum. Fil. p. 228. t. 1. f. 12. Presl. Pterid. p. 184. *Dicksonia arborescens*. L'Herit. Sert. Angl. p. 31. Wall. Cat. n. 64. —*D. integra*. Sw. Syn. Fil. p. 136.

The species corresponding with the above character, as given by Presl, are, besides the above, *B. Sellowianum*, Pr. (*Dicksonia riparia*, Beyrich Herb.), *B. antarcticum*, (*Dicksonia antartica*, Labill., *Cibotium Billardieri*, Kaulf.), *B. Brownianum*, Pr. (*Davallia dubia*, Br. *Dicksonia fallax*, Kaulf.)—They are natives of St Helena, New Holland, and Brazil.

Fig. 1. Under surface of a portion of a fertile frond; magn. 4 diam.—f. 2. Upper surface of the same; do.—f. 3. 4. Sori, with the valves spreading; m. 16 diam.—f. 5. Upper side of a sorus; do.—f. 6. Vertical section of a sorus; do.—f. 7. 7. Sporangia in different stages; m. 50 diam.—f. 8. Sporules; m. 200 diam.—f. 9. 9. Hairs from the receptacle of the sporangia; m. 200 diam.—f. 10. Hairs from the rachis of the frond; m. 200 diam.







ALSOPHILA. *Br. Presl.*CYATHEÆ. *Sp. Auct.* CHNOOPHORA. *Kaulf. Enum. Fil. (Catal. Herb. ex parte).*ALSOPHILÆ *Sect. II.* HAPLOPHLEBIA, *et III.* DICRANOPHLEBIA. *Mart.*

Sori in medio dorsi venarum simplicium aut in ima basi (ala) furcaturæ venarum, globosi, nudi. *Receptaculum* globosum, pilosum. *Sporangia* densissime imbricata, pedicellata, parva.—*Arbores, unica species herbacea* (*A. pruinata*), sæpe *aculeatæ*. *Caudex* teres aut irregulariter angulatus. *Cicatrices stipitum in ordine spirali senario* (¹/₆), *remotæ, ovato-oblongæ, in apicem acutum productæ, concaviusculæ; verrucis externis in orbem, internis in arcum semilunarem dispositis, superioribus binis, lacunis infra cicatricem maximis.* *Frondes herbacæ, supradecompositæ, amplæ.* *Venæ pinnatæ, infra prominulæ, inferiores uni-bifurcatæ, superiores simplices, aut omnes simplices, venulis divergentibus.* *Presl.*

Alsophila aspera. *Br.—Hook. et Grev. Ic. Fil. t. 213, 214, and 215? (Ic. caps. malæ).—Cyathea. Sm.—Polypodium. L.—Sw.*

The Genus *Alsophila*, as now circumscribed by Presl, is a very natural one. The naked rounded sori, at first sight, give the appearance of a *Polypodium*; but the elevated receptacle, and the different nature of the sporangia, annulus, and seeds, mark the group of *Cyatheaceæ*. Martius unites with *Alsophila*, *Trichopteris*, Presl, and *Polypodium rostratum*, Willd., which latter, together with *P. Parkeri*, Hook. et Grev. *Ic. Fil. t. 232*, constitute the Genus *Metaxya*, Presl, (*Amphidesmium*, Schott)—but these, though agreeing with *Alsophila* in the fructification, differ in the venation, in the disposition of the sori, and, above all, in habit.

The species of this genus are numerous, chiefly confined to the tropics, and very difficult to be distinguished in the Herbarium specimens, which exhibit so small a portion of the plant. Mr Bauer's figures were made from a living individual, growing in the Royal Gardens of Kew, which was raised by seeds taken by Mr J. Smith from a Jamaica specimen, and which is now (1838) a fine healthy plant, with a caudex one foot high, and fronds four feet in length. "The sori," Mr Smith observes, "in the early stage, are quite confluent, and the whole frond densely covered with scales; but these are deciduous, falling off long before the sori are perfected. Sometimes a few scales remain, and appear as if they were attached under the sori, but it is evident that they are only held there by the enlargement of the sporangia, and that they cannot be considered in the light of an indusium."—Another species of this genus (*A. excelsa*) has been already figured in this work (Tab. IX.).

Fig. 1. Pinnules, seen from beneath (examined in August, 1834); *magn.* 10 diam.—*f. 2.* Smaller portion of the same (examined in September of the same year); *m.* 10 diam.—*f. 3.* Young sorus, with an indusium-like scale; *m.* 30 diam.—*f. 4.* Young sporangia, from the same; *m.* 100 diam.—*f. 5.* A small portion from the same plant (examined in October, 1834).—*f. 6.* Two sori from the same; *m.* 30 diam.—*f. 7.* Three sporangia from the same; *m.* 100 diam.—*f. 8.* A small portion from the same plant (examined in February, 1835); *m.* 30 diam.—*f. 9.* Sorus from the same; *m.* 50 diam.—*f. 10.* Two sporangia from the same; *m.* 100 diam.—*f. 11.* Sporules; *m.* 400 diam.



TAB. XXII.

SPHÆROPTERIS. Wall. Br.

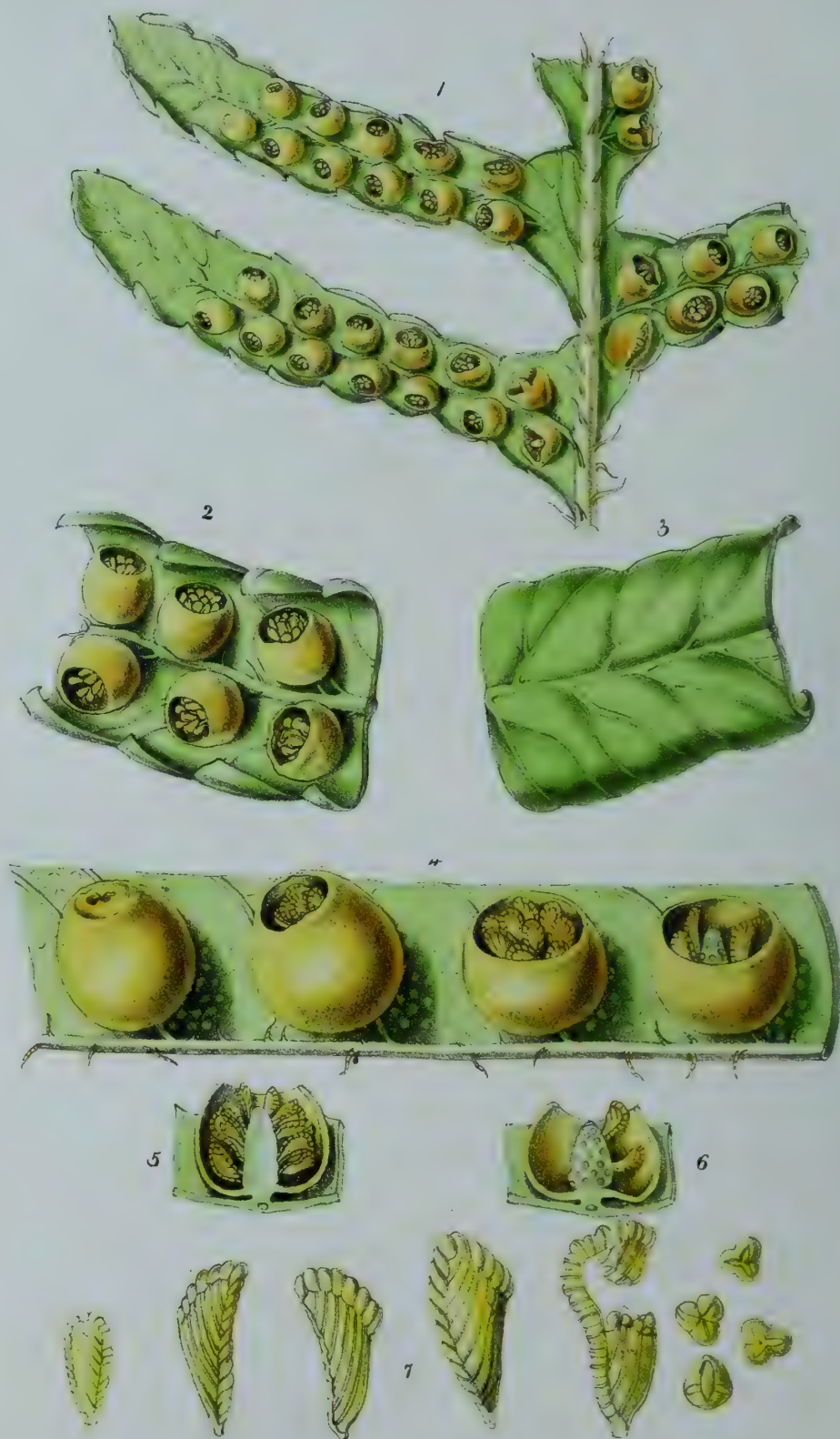
PERANEMA. Don.

Sori e medio venulæ orti. *Indusium* globosum, coriaceum, involucrans, clausum, demum verticaliter dehiscens, bivalve. *Sporangia* pedicellata, receptaculo communi convexo insidentia.—*Filix Nepalensis*; *rhizomate* globoso, magno; *caudice* nullo. *Frondes erectæ, herbaceæ, stipitatæ*, (*stipite rachique paleaceis*), *tripinnatæ*. *Venæ pinnatæ, tenues*; *venulæ intra marginem terminantes, clavatæ, subtus infra apicem glanduliferæ*.

Sphæropteris, barbata. Wall. in *Herb. Soc. Merc. Ind. Or.* 1823 (*haud Bernhardt, quæ Cyatheæ sp.*). Schott, *Gen. Fil. cum Ic.—Pl. Asiat. Rar.* 1. p. 42. t. 48.—*Peranema cyathoides*. Don, *Prodr. Fl. Nep.* p. 12.

This remarkable genus is confined to a single species, and that of such rare occurrence, that no person appears to have found it but the indefatigable and generous Wallich, and he only on the summit of two of the highest mountains, near the great valley of Nepal. Mr Brown, in the *Icones* just referred to, notices the affinity of this genus with *Diacalpe* of Blume, but that has a sessile indusium, opening irregularly, having scarcely pedicellated sporangia, and a more obsolete receptacle. Nearly the same characters will also distinguish it from *Hymenocystis*, C. A. Meyer (figured at Tab. III. of the present work); add to which, the indusia are in that plant pellucid, and they arise from the apex of a veinlet.

Fig. 1. Portion of the under side of a frond; *magn.* 2 diam.—*f. 2.* Smaller portion of the same; *m.* 10 diam.—*f. 3. 4.* Frond, and back view of an unripe sorus; *m.* 20 diam.—*f. 5. 6.* Side and front view of a ripe sorus; *do.*—*f. 7.* Vertical section of the same; *do.*—*f. 8.* Sporangia in various stages; *m.* 100 diam.—*f. 9.* Sporules; *m.* 200 diam.



TAB. XXIII.

CYATHEA. Sm. (*ex parte*). Br.

CYATHEÆ Sect. II. CYATHEA. Presl. DISPHENIA? Presl.

Sori globosi, in basi (ala) furcaturæ inserti. *Indusium* inferum, involucrans, magnum, scariosum, apice dehiscens, ore demum exacte truncato integro vel magis minusve profunde irregulariter partito. *Sporangia* sessilia v. subsessilia, receptaculo elevato globoso v. clavato sæpe hirsuto affixa.—Habitus *Alsophilæ*. Venæ *pinnatæ*; venulæ *furcatæ*.

Cyathea elegans. Heward in *Mag. of Nat. Hist. Sept.* 1838, p. 466.

Presl, as has been already noticed, divides his *Cyathea* into two primary sections—I. NOTOCARPIA, which corresponds with the Genus *Schizocænea**, already described at Tab. II. of this work. II. CYATHEA *vera* of Brown, in which the sori spring from the forking of the veinlets. Here belong, according to Presl, *C. equestris* and *C. divergens*, Kze., *C. hirtula* and *C. vestita*, Mart., *C. Delgadii* and *C. Sternbergii*, Pohl, *C. Sellowiana*, Presl, *C. Schanschin*, Mart., *C. Beyrichiana*, Presl, *C. oligocarpa* and *C. cuspidata*, Kze., *C. aspera*, Sw., *C. glauca*, Bory, *C. canaliculata*, Willd., *C. excelsa*, *C. affinis*, and *C. medullaris*, Sw., *C. muricata*, Willd., and *C. dealbata*, Sw.; to which may be added *C. Grevilleana*, Mart., and the species here represented, drawn from Jamaica specimens, communicated by Mr Heward to Mr J. Smith and Mr Bauer. These two accurate observers have remarked in this, what exists also in at least one other Jamaica *Cyathea*, namely, that there is, at the apex of the young indusium, a portion circumscribed by a circular line (like the operculum of a moss) of a thinner texture than the rest, and somewhat plaited. This gradually breaks away, and leaves a regular entire mouth, which constantly remains so, only becoming wider in age, with the involucre more cup-shaped, and retaining that beautifully regular form long after the dispersion of the sporangia.

The present species seems to agree with the figures and descriptions of *C. arborea*, Sm., except that the receptacle is there described as bipartite, whence Presl has constituted of it the Genus *Disphenia*: but, as it appears to me, on too slight grounds.

Fig. 1. Portion of the under side of a frond; *magn.* 5 diam.—*f. 2.* Smaller portion of the same; *m.* 10 diam.—*f. 3.* The same, seen on the upper side; *do.*—*f. 4.* Sori, in different stages; *m.* 20 diam.—*f. 5. 6.* Vertical sections; *do.*—*f. 7.* Sporangia, in different stages; *m.* 100 diam.—*f. 8.* Sporules, nearly ripe; *m.* 200 diam.

* By mistake printed *Schizocæna*.

THE HISTORY OF THE
CITY OF BOSTON

The city of Boston, situated on a neck of land between the harbor and the bay, was first settled by a small number of Englishmen in 1630. The settlement was founded by a group of Puritan ministers and laymen, who had fled from the religious persecution in England. They were led by John Winthrop, who gave the city the name of Boston in honor of the town in Lincolnshire, England. The city grew rapidly, and by 1680 it had become one of the largest and most important cities in the New England colonies. It was the center of the Puritan movement, and the seat of the Massachusetts Bay government. The city was the site of many important events in the history of the American Revolution, including the Boston Tea Party and the Battle of the Clouds. The city was also the center of the abolitionist movement, and the site of many important events in the history of the American Civil War. The city of Boston is now one of the largest and most important cities in the United States, and is known for its rich history and culture.





TAB. XXIV.

SPHÆROSTEPHANOS.* *J. Smith, mst.*

Sori simplices, oblongi, paralleli, venulis simplicibus prope medium inserti, demum confluentes, subnudi. *Receptaculum* elongatum, medio elevato-cristatum subindusiiforme, glanduliferum, glandulis sphaericis pedicellatis, pedicellis ramosis. *Sporangia* pauca, brevi-pedicellata, in utroque latere receptaculi sita.—*Filix Indiæ Orientalis*. Frondes *bi-tripediales*, *pinnatæ*, *pinnis pinnatifidis*, *laciniis acutis, villosis*. Venæ *pinnatæ*, *venulis simplicibus, subarcuatis, parallelis*. *J. Smith.*

Sphærostephanos asplenioides. J. Smith, mst.—Polypodium? Wall.

Having never had the opportunity of seeing this Fern, I adopt entirely the description (which accompanied the drawing) of Mr J. Smith; who further adds, that “the figure and his remarks were made from an East Indian specimen of Dr Wallich, given him by Mr Lambert, without either number or name or particular locality, and that it is a very distinctly-marked genus, the indusoid receptacle distinguishing it from its allies, which are *Pleurogramma* of Mr Brown, and *Stegnogramma* of Blume: of these, the first has entirely naked sori, while the latter is distinguished by possessing a very thin membranous appendage in the centre of the sorus, something like that of *Sphærostephanos*, but destitute of the spherical bodies of the apex.”—(It may, however, be observed, that Blume has, in his *Flora of Java*, now reduced this genus to *Gymnogramma*, though Presl retains it, on account of its peculiar venation. W. J. H.)

Fig. 1. Portion of the under surface of a frond; *magn.* 3 diam.—*f. 2.* The same, seen on the upper surface; *do.*—*f. 3.* Smaller portion (under side); *m.* 6 diam.—*f. 4.* Lesser portion; *m.* 12 diam.—*f. 5.* Section from the same, with sporangia; *m.* 100 diam.—*f. 6.* Small portion of the glandular crest of the receptacle; *do.*—*f. 7.* Transverse section of the receptacle, with its crested and glandular summit, and with two lateral sporangia; *do.*—*f. 8.* Sporules, scarcely mature; *m.* 200 diam.

* From *σφαῖρα*, a globe, and *στεφάνος*, a crown, the sori having a central pseudo-indusium, bearing numerous spherical bodies at its apex. *J. Smith.*





TAB. XXV.

CIBOTIUM. *Kaulf. Presl (ex parte).*

PINONIA. *Gaudich.*

Sori depresso-globosi, intramarginales, ad apicem venularum. *Indusium* bivalve, coriaceum, durum, valvis inæqualibus (interiore minore) v. subæqualibus. *Receptaculum* parvum, convexum.—*Filices tropico-Americanae v. ex Insulis Sandvicensibus, caudice in unica specie* (C. Chamissoi) *arboreo, plerumque rhizomate globoso. Frondes amplæ, speciosæ, rigida, decomposito-pinnatæ, subtus sæpe glaucae. Venæ pinnatæ, simplices furcatæve.*

Cibotium Schiedii. Schlecht. in Linnæa, v. 5. p. 616.

The thick and horny indusia (together with a very rigid and peculiar habit), separate *Cibotium* from *Dicksonia*. Its generic distinction from *Balantium* (already given at Tab. XX.), though the two genera are placed widely apart by Presl, is of a mere dubious character, depending, as it does, almost wholly on the dissimilar nature of the outer and inner valves of the indusium in *Balantium*, the exterior one being green and herbaceous, in other words, formed by a lobule of the margin of the frond; but in *B. Sellowianum*, Presl, there is scarcely any difference in the colour and texture of the two valves. Presl refers to his Genus *Cibotium*, *C. glaucum*, Hook. et Arn. (*Dicksonia glauca*, Sm., *C. Chamissoi*, Kaulf., *Pinonia splendens*, Gaudich.), *C. Schiedii*, Schlecht. (the species here figured, from specimens gathered in Mexico by Deppe), *C. adiantoides*, Presl (*Davallia*, Sw.), *C. ? glaucophyllum* and *C. proliferum*, Presl, which last is *Deparia Macraei*, Hook. et Grev. *Ic. Fil. t. 154*, and, as we still venture to consider, both by its habit and fructification, quite a distinct genus.

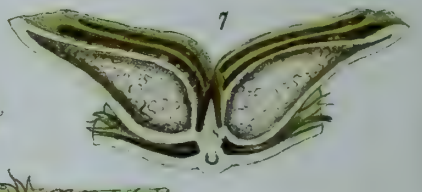
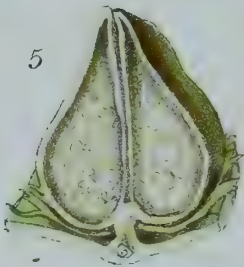
Fig. 1. Small portion of a frond, upper surface; *magn.* 2 diam.—*f. 2.* The same, under surface; *do.*—*f. 3.* Smaller portion of the same; *m.* 10 diam.—*f. 4. 5. 6. 7.* Sori in different states; *m.* 20 diam.—*f. 8.* Vertical section of a sorus; *do.*—*f. 9.* Sporangia in different states; *m.* 100 diam.—*f. 10.* Ripe sporules; *m.* 200 diam.—*f. 11.* Hairs found among the sporules; *m.* 100 diam.—*f. 12.* Hairs from the frond and stipes; *m.* 100 diam.

THE FIRST PART OF THE HISTORY OF THE
LIFE OF THE LATE KING CHARLES THE FIRST
BY JOHN BURNET

IN TWO VOLUMES

VOLUME THE FIRST

LONDON: Printed by J. Sturges, at the Angel in St. Dunstons Church, 1704.



TAB. XXVI.

MARATTIA. Sm.

MYRIOTHECA. Comm. CELANTHERA. Thoun.

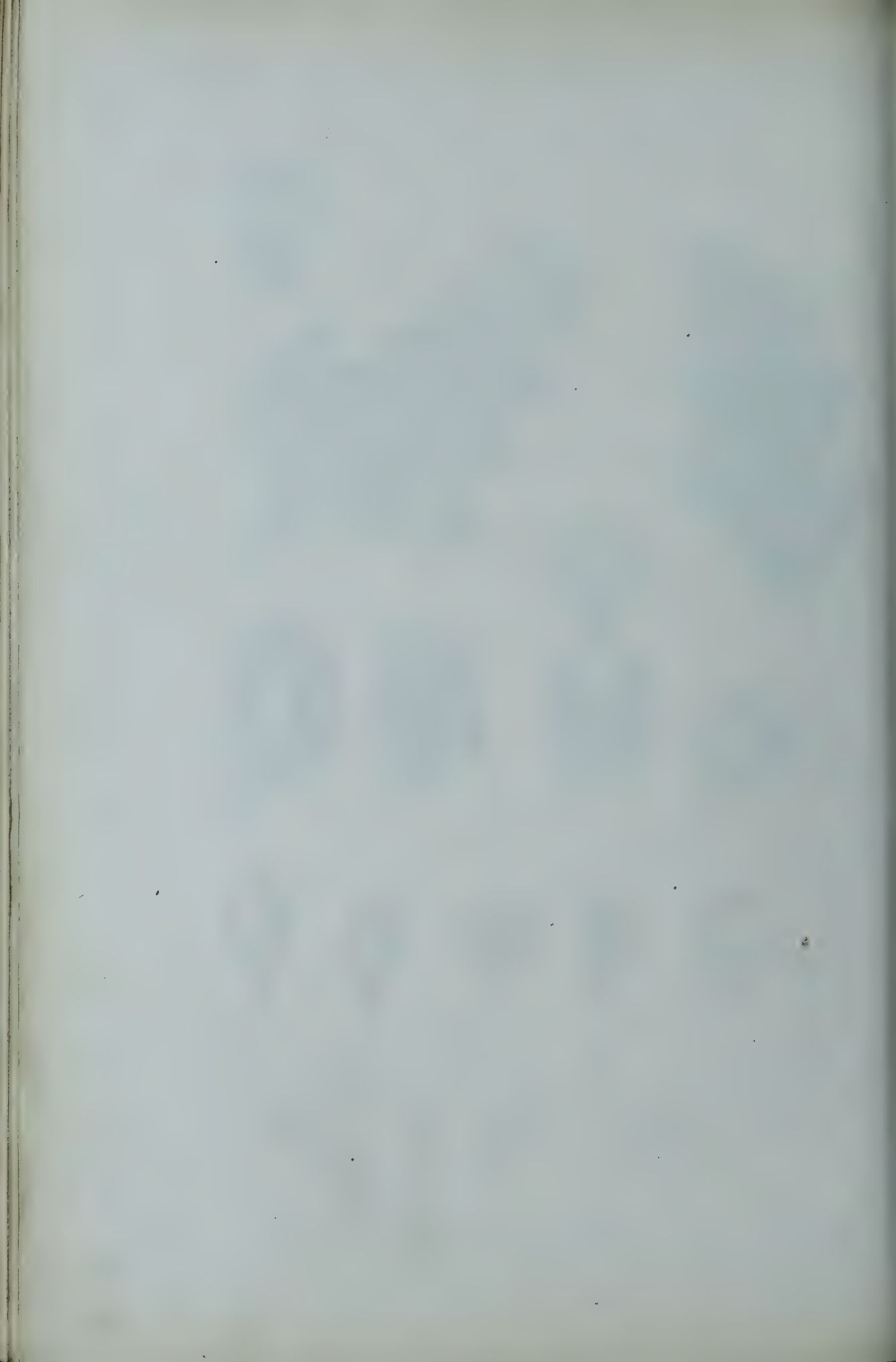
Sori oblongi, venulæ furcatæ simplici serie margine approximata inserti. *Indusium* valvis lamelliformibus coriaceis e sporangiis coadunatis quasi formatum, intus planis extus convexis, demum magis minusve patentibus, plurilocularibus; loculis transversis demum rima longitudinali intus dehiscentibus. *Sporulæ* minutissimæ, copiosissimæ, subreniformes, granulosa. *Receptaculum* lineare, fimbriatum.—Filices *tropicæ*, caudice erecto. Rhizoma crassum. Frondes decompositopinnatæ, membranaceæ, serratæ. Venæ pinnatæ; venulæ simplices v. furcatæ, parallelæ.

Marattia alata. Sm.

The species hitherto enumerated of this curious genus are, *M. alata*, Sm. (*M. lævis*, Sm. var.), *M. Kaulfussii*, J. Smith, mst. (pinnulis oblongo-ovatis pinnatifidis lobis bi-tridentatis, soris stipitatis!—*M. alata*, Raddi, Fil. Bras. p. 74. t. 83. 84. et in Herb. nostr. non Sm.) *M. sambucina* and *M. sylvatica*, Bl., *M. fraxinea*, Sm. (*M. salicifolia*, Schrad.), *M. cicutæfolia*, Kaulf. Mart. (Ic. Crypt. Brasil. p. 119. t. 69—72.—*M. Raddiana*? Schott, Gen. Fil. cum. Ic.), *M. sorbifolia*, Sw., *M. attenuata*, Labill., *M. salicina*, Sm.

Fig. 1. Portion of the under surface of a pinnule; *magn.* 4 diam.—*f.* 2. 3. 4. Sori in different ages; *m.* 12 diam.—*f.* 6. 7. 8. Transverse section of the same; *do.*—*f.* 8. Longitudinal and transverse section of a sorus, to show the cavities or cells (in other words, the sporangia combined with the indusium); *m.* 25 diam.—*f.* 9. The receptacle, with its scaly or fimbriated margin; *m.* 12 diam.—*f.* 10. Nearly ripe sporules; *m.* 400 diam.





TAB. XXVII.

DAVALLIA. Sm. Presl.

DAVALLIA Sp. Auct. plurim.—DAVALLIA et WIBELIA. Bernh.

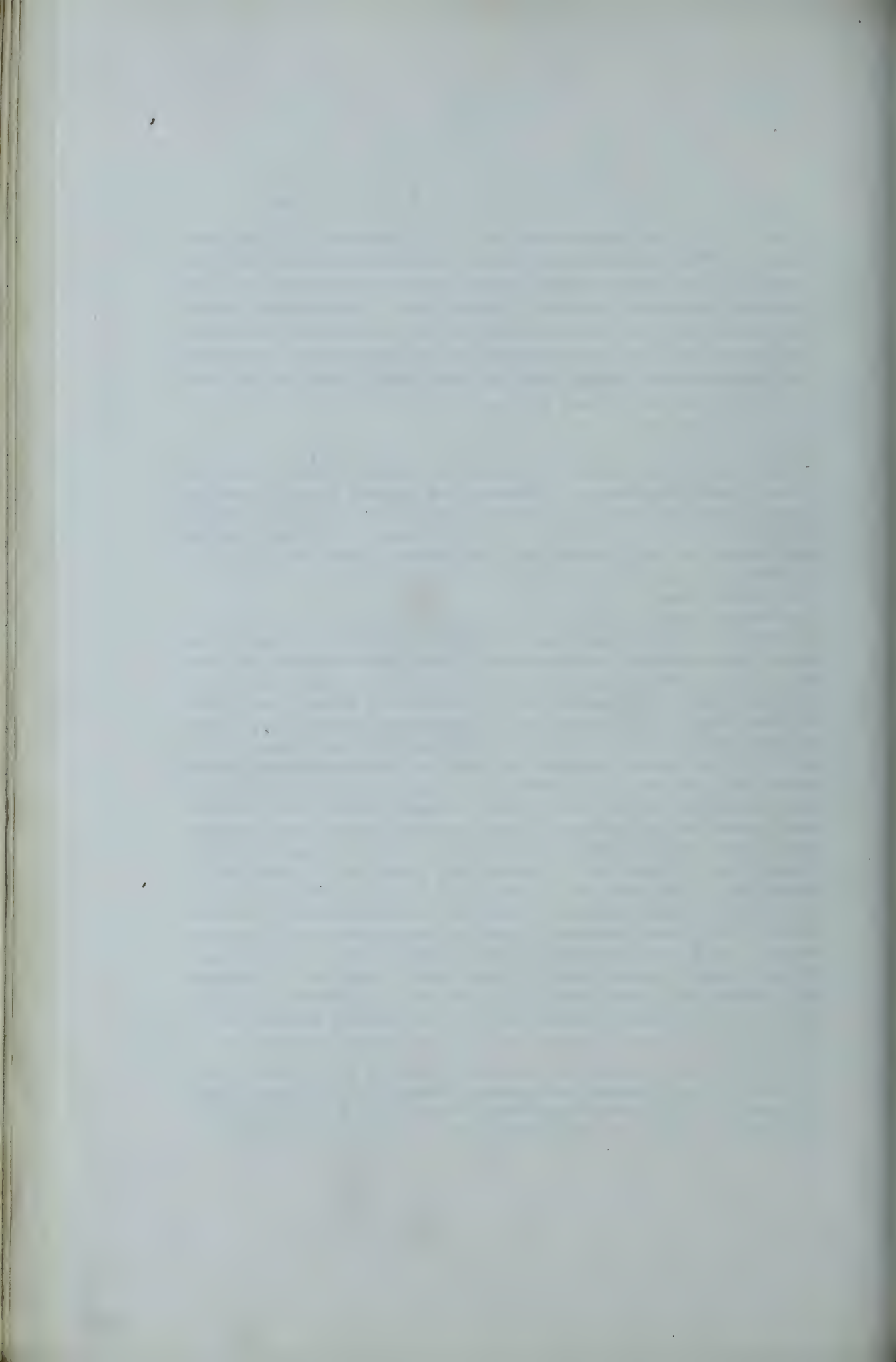
Sori globosi (v. ovales) inframarginales, aut dentis dorsum aut illius sinum occupantes. Indusium scariosum, orbiculatum (v. ovale) dimidio superiori libero, aut semiorbiculatum margine superiori rectilinee truncato vel latissime obtuso. Receptaculum punctiforme, minutum.—Rhizoma repens. Frondes sparsæ, coriaceæ aut herbaceæ, simplices, lobato-pinnatifidæ aut pinnatim compositæ, nonnumquam steriles dissimiles. Venæ in fronde fertili pinnatæ, simplices aut furcatæ, venulatum superiore sorifera, internæ, tenues aut apicem versus crassescentes, in fronde sterili apice acuto ante marginem frondis terminatæ. Presl.

Davallia pyxidata. Cav.

Davallia, as it has been considered by most authors, constitutes a Section "*Davallieæ*" of Presl, including four Genera—1. *Microlepia*, Presl, of which *Davallia flaccida*, Br. (*Dicksonia polypodioides*, Sw.), is an example; 2. *Saccoloma*, Kaulf., to which *Davallia flagellifera*, Wall.—Hook. et Grev. Ic. Fil. v. 2. t. 183, belong; 3. *Stenolobus*, including *Davallia solida*, Sw.; and 4. *Davallia* itself: while *Davallia contigua*, Sw., and its allies, are placed by the same author in a very different cohort, and next to *Vittaria*, under the Genus *Prosaptia*, Presl.

Davallia, thus circumscribed, contains four groups, according to Brown and Presl. The latter adopts the following arrangement:—§ I. HUMATA. Cav. Frondes coriaceæ, steriles simplices, venis uni-bifurcatis venulisque parallelis tenuibus, fertiles dissimiles pinnatifidæ, venis simplicibus crassiusculis apicem versus crassescens. Sori in dorso dentium. Indusium orbiculatum, dimidio superiori libero. *D. pinnatifida* and *D. heterophylla* of Smith, *D. lobulosa*, Wallich. § II. PACHYPLEURIA. Frondes coriaceæ, conformes; venæ creberrimæ apicem versus lineari-clavatæ, inferiores angulo acutissimo furcatæ, venulis tenuioribus. Sori in sinu dentium. Indusium orbiculatum aut reniformi-orbiculatum, dimidio superiori liberum. *D. pedata*, Sw., *D. serrata*, Willd., *D. lepida*, Presl, *D. pectinata*, Sm., *D. ? Gaimardiana*, Presl. § III. COLPOSORIA. Frondes coriaceæ, conformes; venæ creberrimæ, tenues, æquales, inferiores angulo acuto furcatæ. Sori in sinu dentium immersi. Indusium semiorbiculatum, margine superiori recto vel latissime obtuso. *D. angustata*, Wall., *D. Belangeri*, Bory, *D. elegans*, Sw., *D. epiphylla*, Sw., *D. elata*, Sw., *D. patens*, Sw., *D. pyxidata*, Cav., *D. Canariensis*, Sw., *D. thecifera*, H. B. K., *D. chærophylla*, Wall., *D. falcinella*, Presl, *D. parvula*, Wall. § IV. ODONTOSORIA. Frondes coriaceæ vel herbaceæ, conformes; venæ internæ, tenuissimæ, simplices aut furcatæ, steriles apice punctiformi instructæ. Sori in dorso dentium, infra apicales, superficiales, minuti. Indusium semiorbiculatum, margine superiori truncato. *D. biflora*, Kaulf., *D. retusa*, Cav., *D. cuneiformis*, Sw., *D. gibberosa*, Sw., *D. remota*, Kaulf., *D. Chinensis*, Sw., *D. tenuifolia*, Sw., *D. meifolia*, H. B. K., *D. bifida*, Kaulf., *D. divaricata*, Blume, *D. Schlechtendalii*, *D. clavata*, Sw., *D. flexuosa*, Spr., *D. thalictroides*, *D. dumosa*, Sw., *D. aculeata*, Sw., *D. fumarioides*, Sw.

Fig. 1. Under surface of a portion of the frond; magn. 5 diam.—f. 2. Upper surface of a portion of the same; do.—f. 3. Young sorus; m. 10 diam.—f. 4. Old sorus; do.—f. 5. Vertical section of the indusium; do.—f. 7. The same, the sporangia being removed to f. 6; do.—f. 8. Transverse section of a sorus; do.—f. 9. 10. Sporangia in different states; m. 100 diam.—f. 11. Sporules; m. 400 diam.







TAB. XXVIII.

LYGODIUM. Sw.

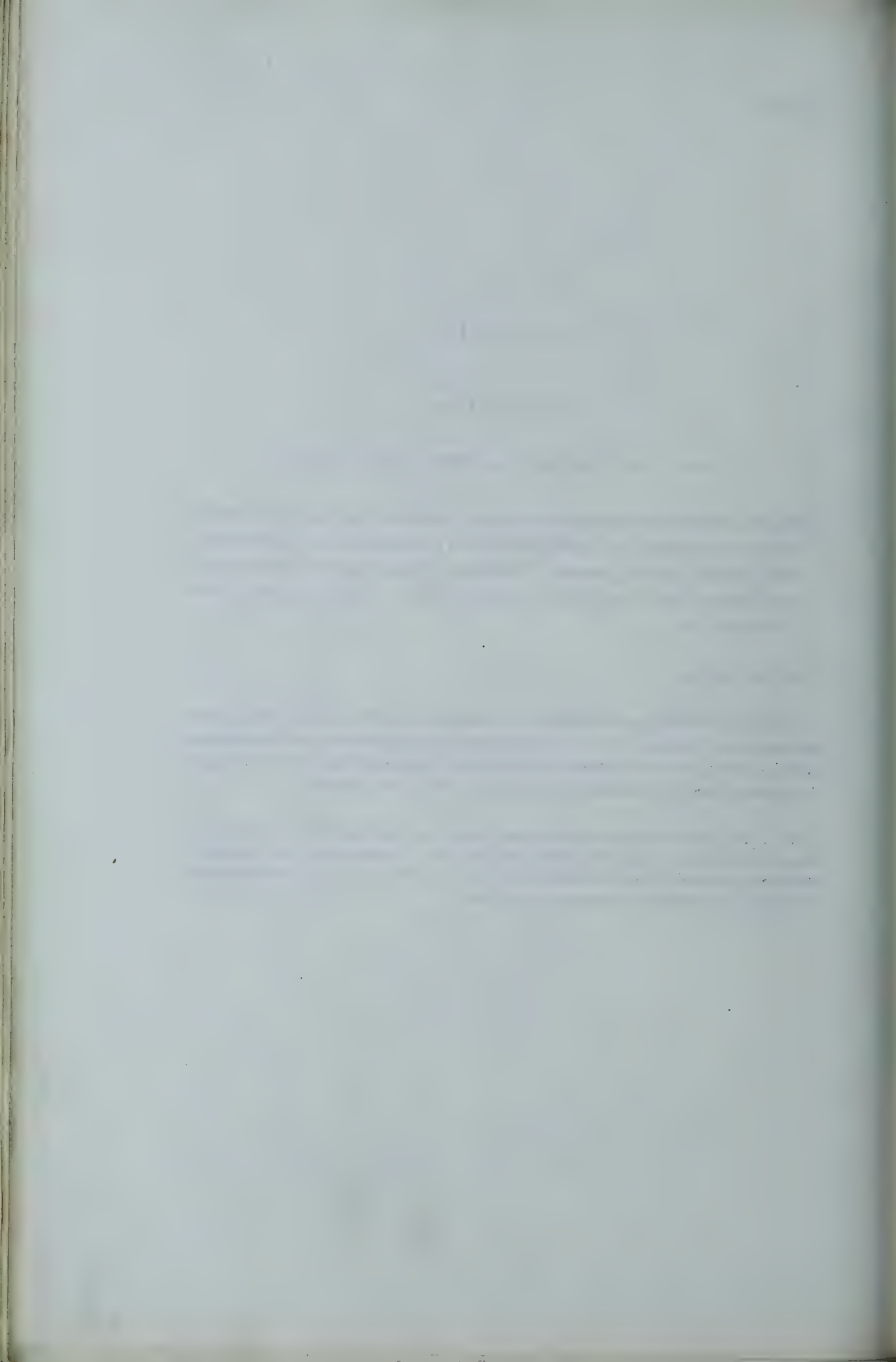
UGENA. Cav. HYDROGLOSSUM. Willd. CTEISIUM. Mich.

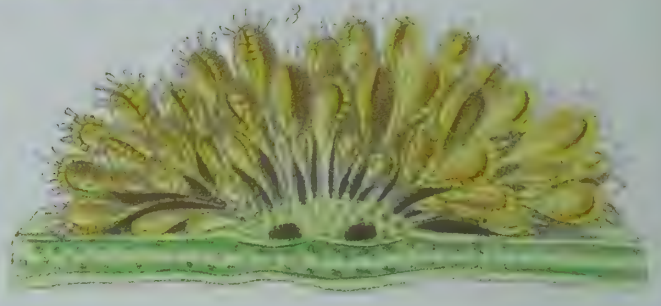
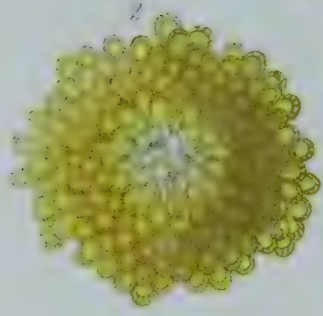
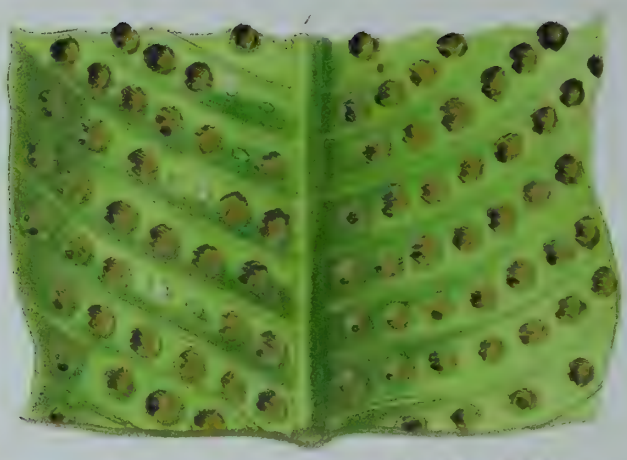
Sporangia sessilia vel brevissime stipitata, ovata, reticulata, resupinata, apice radiatim striata, medio inserta : in spiculis (simplicibus e margine pinnæ v. dichotomis in fronde mutata) dorsalia, biseriata. *Indusium* : *Squamæ* capsulas distinguentes, e venis spiculæ ovatæ, supra liberæ.—*Stipes volubilis*. Frondes *conjugatæ*, *divisæ* v. *compositæ*. Br.

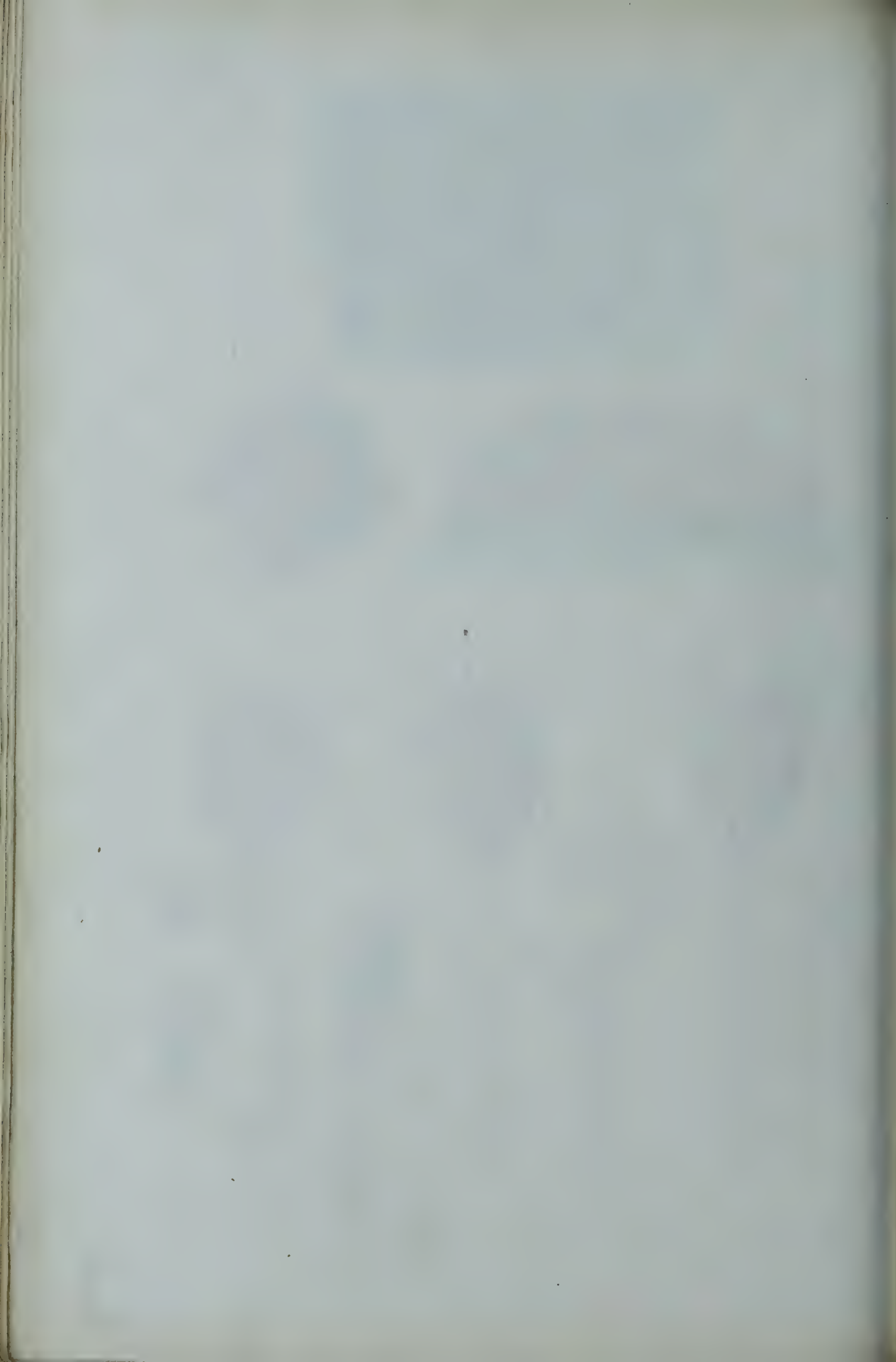
Lygodium volubile.

Of this very distinct genus, admirably characterized by Mr Brown, twenty-eight species are taken up by Sprengel ; but there is good reason to believe that many of these are mere varieties. They are chiefly of tropical origin, both in the new and old world ; one species, *L. palmatum*, however, extending to the parallel of 41° in N. America.

Fig. 1. Small portion of a frond, under side ; *magn.* 8 diam.—*f. 2.* Fertile segment from the same, under side ; *m.* 20 diam.—*f. 3.* Upper side of the same ; *do.*—*f. 4.* The same, under side ; the scales or indusia being removed, to show the singular insertion of the sporangia ; *do.*—*f. 5.* Sporangia in different stages ; *m.* 50 diam.—*f. 6.* Sporules ; *m.* 200 diam.







TAB. XXIX.

PHYMATODES. *Presl.*

POLYPODI Sp. *L. et Auct.* DIPTERIS. *Reinw.* POLYPODI Sect. *Drynaria.* *Bory. Br.*
MICROSORUM. *Link.* ANAXETUM. *Schott.*

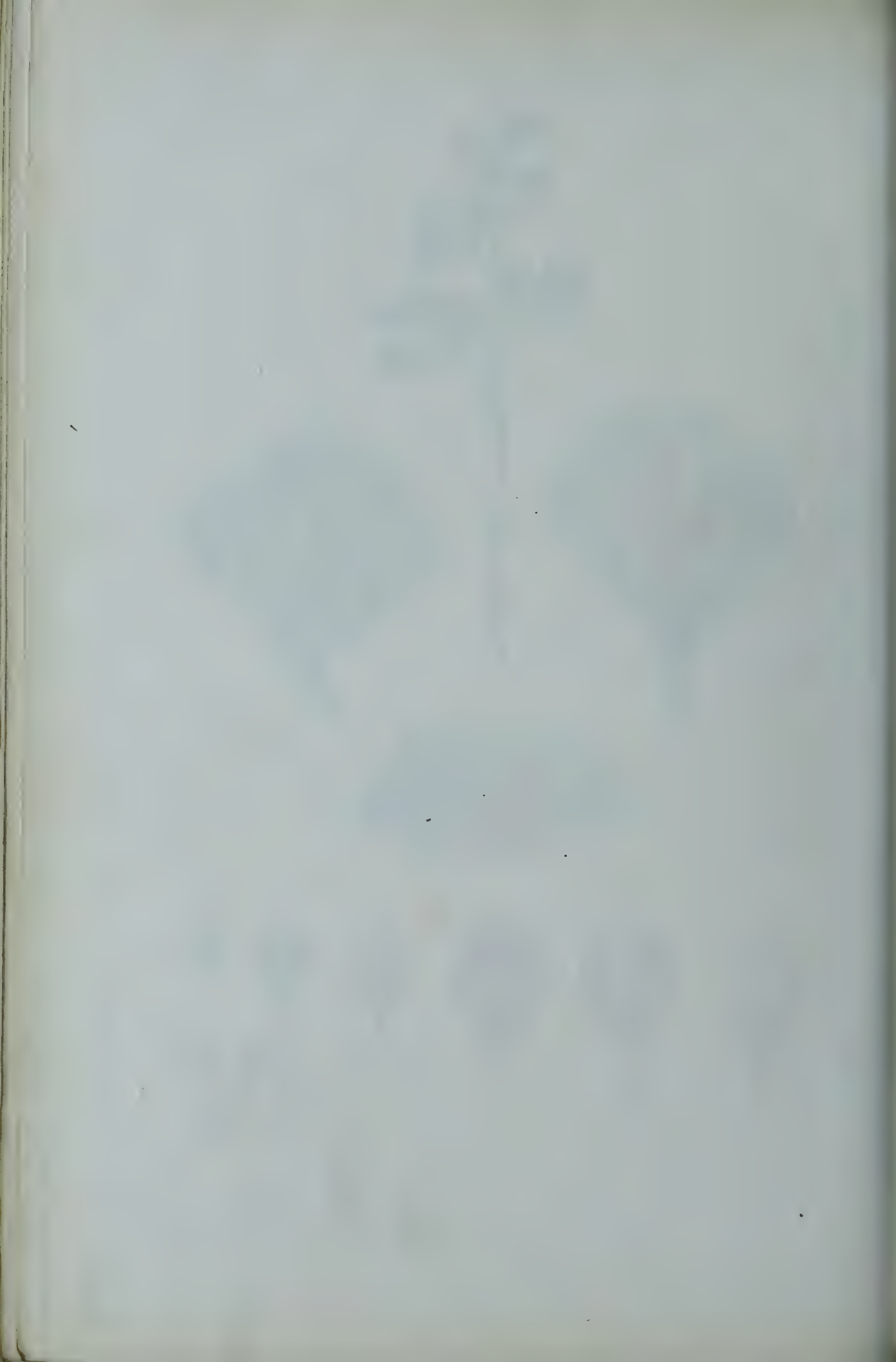
Sori globosi, nudi, aut anastomosi venularum aut apici venularum (venulis sæpe obscuris) inserti.—*Rhizoma repens v. nodosum.* Frondes simplices pinnatifidæ v. pinnatæ. Venæ pinnatæ, internæ, tenues v. elevatæ, costæformes, ramosissimæ. Venulæ primariæ in maculas hexagonoideas subrotundas aut irregulariter parallelogrammas lateribus curvatis anastomosantes, secundariæ in maculas minores hexagonoideas aut parallelogrammas aut subquadratas aut irregulariter angulatas confluentes aut liberæ apice globuloso-incrassatæ clavatæve, simplices aut furcatæ, rectæ, aut hamatæ. *Presl.*

Phymatodes crassifolia. *Presl.*—*Polypodium.* *L.*—*Anaxetum.* *Schott, Gen. Fil. cum Ic.*

Mr Brown's original views respecting the value of the venation in Ferns, first employed in the *Prodr. Fl. Nov. Holl.*, and upon a far more extended scale as relates to the old Genus of *Polypodium*, (but which, it is to be greatly regretted, have only lately met the public eye in the invaluable "*Plantæ Javanicæ Rariores*" of Dr Horsfield,) have been, in a great measure carried out by Dr Presl, in his "*Tentamen Pteridographiæ*," with this difference, that what Mr Brown considers as sectional divisions or subgenera of *Polypodium*, Presl raises to the rank of genera. Thus *Phymatodes*, Presl, is the section *Drynaria* of *Polypodium*, with Bory and Brown, essentially distinguished by the very much branching and anastomosing veinlets, with the sori seated at the point of confluence of these veinlets, or at the apex of a free veinlet, hence, I presume, including Mr Brown's subgenus *Phlebodium*. The species thus ranking under *Phymatodes* are numerous, and Presl has three primary groups. § I. EUPHYMATODES. Venæ internæ aut elevatæ, nunquam costæformes. Maculæ omnes aut saltem primariæ hexagonoideæ:—of which *Pol. phymatodes*, *L.* (*Phymatodes vulgaris*, Presl,) is an example. § II. PLEURIDIUM. Venæ valde elevatæ, costæformes. Venulæ internæ, tenuissimæ, sæpe obscuræ et post repetitum macerationem conspicuæ, maculas hexagonoideas v. parallelogrammas v. irregulares efficientes:—to which is referred our *P. crassifolia*. The character of this division will account for the venulation not being represented in our figure; it is wholly internal. § III. DRYNARIA. Venæ sæpissime valde elevatæ, costæformes. Maculæ primariæ transversim parallelogrammæ, lateribus (venulis) curvato-arcuatis; maculæ secundariæ parvæ, subquadratæ aut parallelogrammæ aut irregulariter hexagonoideæ. Frondes coriaceæ.—This contains, in two sub-sections, *Pol. irioides*, Lam., *P. Wallichii*, Hook. et Gr., *P. quercifolium*, L., &c.

Fig. 1. Portion of the under surface of a frond; *nat. size.*—*f. 2.* Sorus; *m.* 10 diam.—*f. 3.* Vertical section of the same; *m.* 20 diam.—*f. 4.* Sporangia in a young state; and *f. 5.* in a ripe state; *m.* 100 diam.—*f. 6.* Spores in a young state; *m.* 200 diam.





TAB. XXX.

ASPLENIUM. Presl.

ASPLENII Sp. L. et Auct. DAREA. Sm. CÆNOPTERIS. Bernh.

Sori lineares, elongati. *Indusium* elongatum e vena lateraliter ortum ducens, planiusculum, margine superiore libero.—*Rhizoma subglobosum*. Frondes *fasciculatæ*, *simplices lobatæ aut varie divisæ*. Venæ *pinnatæ, simplices aut uni-bifurcatæ, venulis parallelæ, aut apice libero punctiformi acutove terminatæ, aut arcu transverso conjunctæ (ut in A. Nidus).*]

Asplenium Ruta muraria. L.

Our Tab. VI. represents an *Asplenium* with very narrow segments, each segment bearing only one sorus, which thus appears to open outwardly, that is, towards the margin, (*Darea*, Sm., *Cænopteris*, Bernh.). The well known *Aspl. Ruta muraria*, now represented, exhibits the more usual character of the genus, while, on the other hand, the venation is quite obscure, and scarcely to be seen but by dissection or after maceration.

Fig. 1. A small plant of *Asplenium Ruta muraria*; *magn.* 2 diam.—*f. 2.* Under side of a pinna, with scarcely ripe sori; *m.* 10 diam.—*f. 3.* Another pinna, more advanced; *m.* 10 diam.—*f. 4.* Vertical section of a sorus; *m.* 20 diam.—*f. 5.* Sporangia in a young state; *m.* 100 diam.—*f. 6.* Sporangia in a ripe state; *do.*—*f. 7.* Sporules; *m.* 200 diam.





TAB. XXXI.

TRICHOMANES. Linn.

DIDYMOGLOSSUM. Desv. HYMENOSTACHYS et FEEA. Bory.

Sori marginales. Sporangia sessilia (annulo completo transverso) receptaculo communi filiformi producto inserta, intra indusium cyathiformem monophyllum textura frondis.—Filiculæ plerumque repentes, caudice seu rhizomate filiformi, rarius cæspitosæ, præcipue tropicæ. Frondes simplices, varie divisæ vel decompositæ, membranaceæ, pellucidæ, costatæ, pulcherrime reticulatæ, atro-virides, non raro siccitate nigrescentes; fertiles quandoque diffformes spicatæ. Pubes e pilis simplicibus aut stellatis. Indusium “e bullata compagine lobulorum binorum lateralium confluentium ortum.” (Mart.) Receptaculum e vena elongata frondium basi sporangiferum. Sporulæ lobatæ quasi e tribus seu quatuor formatæ.

Trichomanes alatum. Sw.—non Hook. in Fl. Lond. (TAB. XXXI.) Hook. et Grev. Ic. Fil. tab. XI.

The present and the following Genus (*Hymenophyllum*) are excluded from the true Ferns in Presl's able work, and Endlicher had previously constituted of them the Order *Hymenophylleæ*, chiefly distinguished by the complete transverse ring to the sporangia, the filiform exserted receptacle, and the delicate texture of the frond; but we prefer Brown's arrangement in making them part of *Polypodiaceæ*, ranking near *Davallia* and *Loxosoma*. Mr J. Smith well observes—“In *Davallia*, the pedicels of the sporangia are free, and rise vertically from the apex of the vein; in *Loxosoma* (see Tab. 15), they are united (but not quite their whole length), and form a columnar receptacle, the sporangia being placed one above another, and inclining a little outwards, which, according to my view, accounts for the obliquity of the ring in that Genus:—but in *Hymenophyllum* and *Trichomanes*, the sporangia are sessile around the columnar receptacle in an imbricated manner, the upper edge inclining a little outwards, their attachment being slightly excentric, with the ring placed vertically (as regards the receptacle) on the exterior side of the base or point of attachment; and this is quite analogous to the flattened sporangia of the compact sori in *Alsophila* and *Cyathea*, and other Genera which have sessile sporangia on an elevated receptacle, upon which character Presl has formed a very unnatural and untenable Sub-Order, which he calls “*Helicogyrateæ*.”

The species of the present Genus are very numerous and highly beautiful; one species, and one alone (the *T. brevisetum*), is familiar to the British botanist as an inhabitant of moist rocks in the vicinity of cascades at Powerscourt, near Dublin, and about the Lakes of Killarney, Ireland.

Fig. 1. 2. Under and upper side of a portion of a frond; magn. 5 diam.—f. 3. A sorus, under side, and f. 4. do. lower side; m. 15 diam.—f. 5. Under surface of the same, with part of the indusium removed; m. 15 diam.—f. 6. Base of the receptacle, with sporangia; m. 25 diam.—f. 7. do., with the sporangia removed in front; m. 25 diam.—f. 8. Small portion of the indusium, and f. 9. do. of the frond; m. 100 diam.—f. 10. Sporangia in different stages; m. 100 diam.—f. 11. Sporules; m. 200 diam.



TAB. XXXII.

HYMENOPHYLLUM. *Sm.*

Sori marginales. *Sporangia* sessilia vel subsessilia (annulo completo plerisque transverso) receptaculo communi cylindraceo plerumque incluso inserta, intra indusium bivalve monophyllum, textura frondis areolis planis.—*Filiculæ habitu fere omnius ut in Trichomani, in regionibus tropicis præcipue. Sporulæ (in H. Tunbridgense) triangulares, linea triradiata depressa in disco.*

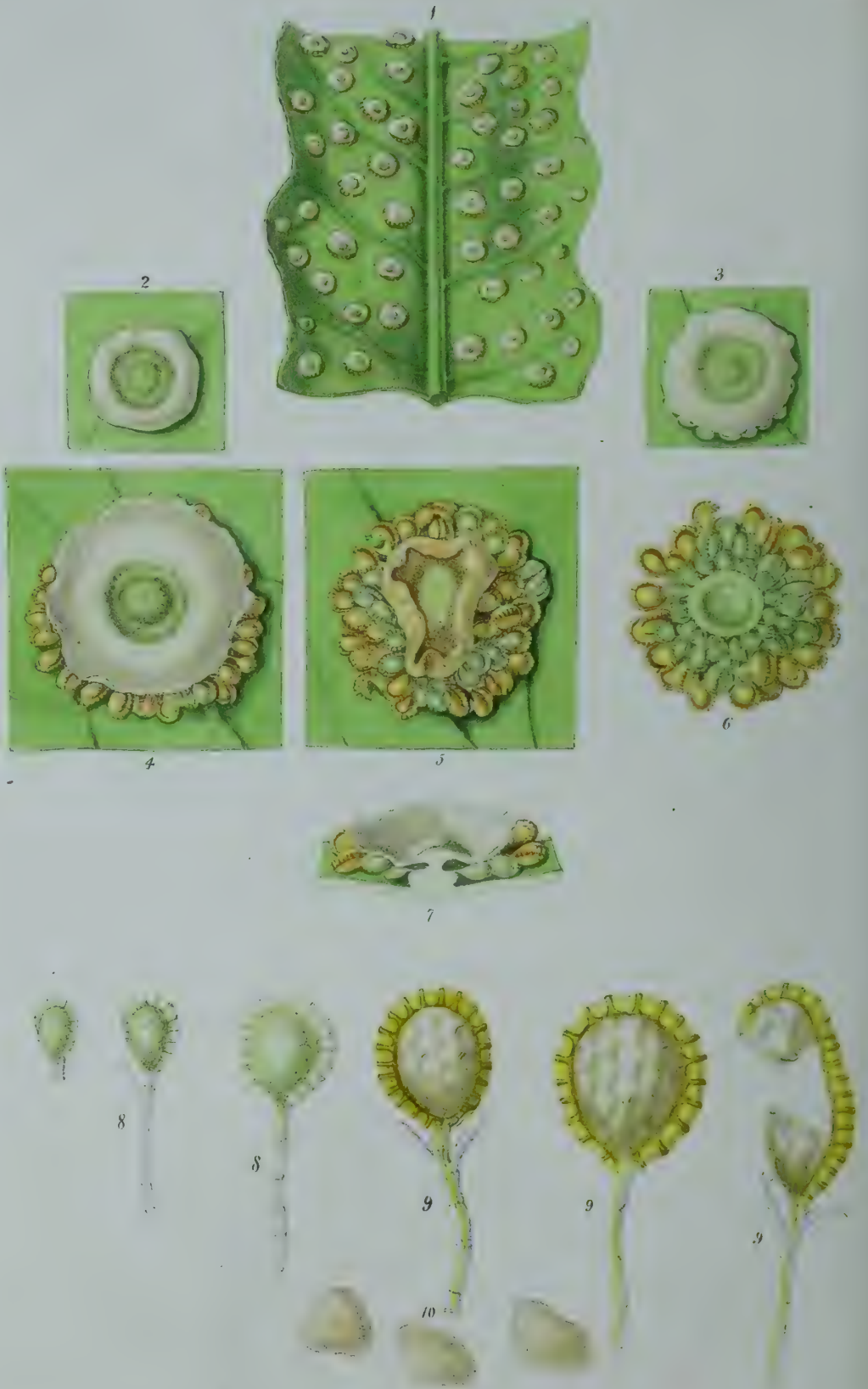
Hymenophyllum Tunbridgense. Sm. (TAB. XXXII.)—Engl. Bot. tab. 162. Hook. Fl. Lond. cum Ic.

A Genus, first separated from *Trichomanes* by Sir James Smith, chiefly on account of the two-lipped involucre and the generally included receptacle. The sporules of the present species, however, are considerably different from those of the *Trichomanes alatum* (Tab. nostr. XXXI.), and we may observe that the sporangia here given, in Mr Bauer's figure of *H. Tunbridgense*, exhibit a more decided stipes, and a more excentric point of attachment, and consequently a more oblique annulus than we have ourselves observed in this species. This appearance may have been owing to the very crowded state of the sporangia in Mr Bauer's specimens.

The species of this Genus are likewise numerous, and chiefly confined to the tropics. Two, however, are found as far north as the British isles—namely, the subject of the present plate and *H. Wilsoni*, Hook.

Fig. 1. Upper side of a portion of a frond; *magn.* 6 diam.—*f. 2.* Under side of a sorus; *f. 3.* A side view of the same; *f. 4.* A longitudinal section; *f. 5.* do. through the receptacle; and *f. 6.* Transverse section of a sorus, through the receptacle; *m.* 10 diam.—*f. 7.* Sporangia; *m.* 50 diam.—*f. 8.* Sporules; *m.* 200 diam.—*f. 9.* Small portion of the frond; *m.* 50 diam.





TAB. XXXIII.

ASPIDIUM. Schott. Presl.

ASPIDIUM spec. Auct. NEPHRODIUM sp. Bory. HYPOPELTIS. Rich.

Sori dorso venularum aut angulis macularum inserti, globosi, magni. *Indusium* orbiculatum, peltatum.—*Rhizoma subglobosum*. Frondes *fasciculatæ, stipitatæ, herbacæ, lobatim pinnatimque divisæ*. Venæ *pinnatæ, distantes, costæformes, plus minus flexuosæ, ramosissimæ*. Venulæ *primariæ in maculas (primarias) hexagonoideas inæquales et acutangulas aut parallelogrammas lateribus curvatis, secundariæ in maculas minores hexagonoideas vel inæqualiter angulatas interne ramuliferas anastomosantes*. Ramuli *liberi simplices ramosique, recti aut incurvi, apice acutiusculo desinentes*. Sori *multiseriales*.—Species *tropicæ Americanæ et Asiaticæ*. Presl.

Aspidium trifoliatum. Sw. (TAB. XXXIII.)

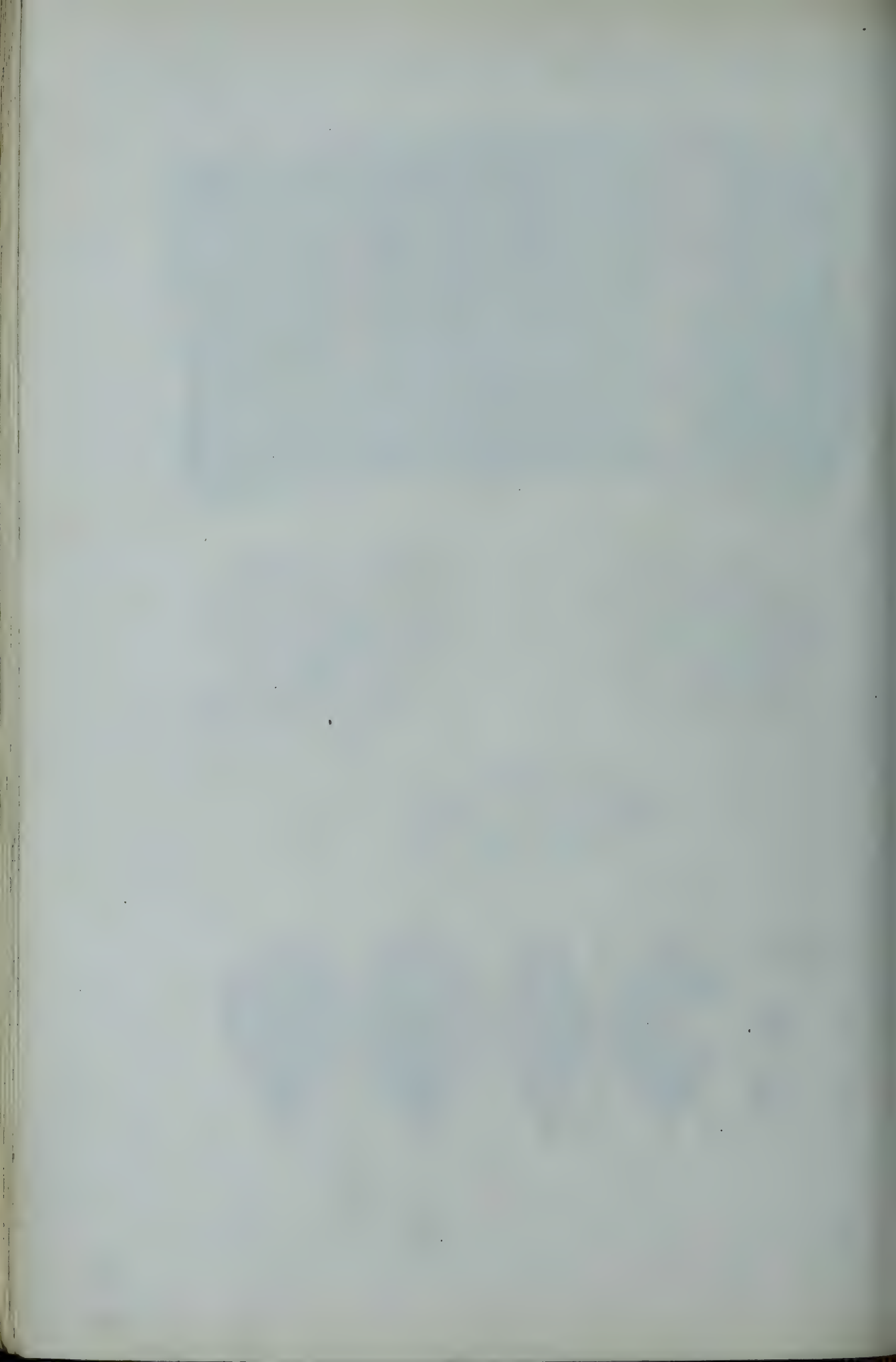
Various have been the opinions of botanists as to the limits of the Genus *Aspidium*. Of the propriety of separating those species with peltate indusia from those with the reniform ones, fixed by the sinus, there can now be scarcely a question; and hence the two Genera adopted by Brown, of *Aspidium* and *Nephrodium*. These, again, are by Presl subdivided according to the nature of the venation. In this present instance, Presl's ideas are adopted, and his *Aspidium* divides itself into two groups.

§ 1. ASPIDIUM (verum). Maculæ primariæ hexagonoideæ;—embracing *A. Plumieri*, Presl; *A. trifoliatum* and *macrophyllum* of Sw.; and *A. heracleifolium*, Willd.

§ 2. BATHMIUM. Maculæ primariæ parallelogrammæ, latere interiore et posteriore curvato;—including *Asp. alatum* and *Singaporianum*, Wall.; *A. decurrens*, *Menyanthes*, and *Hænkei*, Presl; and *A. repandum* and *polymorphum*, Willd.

Fig. 1. Under surface of a small portion of a frond; *magn.* 5 diam.—*f.* 2. 3. Sori in a young state, and *f.* 4. 5. in a more advanced state; *m.* 20 diam.—*f.* 6. The same sorus as at *f.* 5, seen from beneath; *do.*—*f.* 7. A vertical section through the sorus; *do.*—*f.* 8. 9. Sporangia in different states; *m.* 100 diam.—*f.* 10. Sporules; *m.* 200 diam.





TAB. XXXIV.

TRICHOPTERIS. Presl.

CHNOOPHORÆ sp. Kaulf. ALSOPHILÆ sp. Kunze et Mart.

Sori in medio dorsi venæ venulæque globosi nudi. *Receptaculum* sessile, globosum, areolatum, pilis longis crinitum. *Capsulæ* subsessiles.—Arbores *aculeatæ*, *excelsæ*. Caudex 8-angularis, duodecim-octodecempedalis. *Insertio stipitum in ordine spirali duodenario* ($\frac{1}{12}$), *cicatricibus contiguïs rhombeis planis, verrucis externis in rhombum dispositis, centralibus sparsis*. Frondes coriaceæ, bipinnatæ, pinnis pinnulisque petiolatis. Venæ pinnatæ, crebræ, utrinque prominulæ, simplices aut fere a basi furcatæ, venulisque parallelæ ac apice incrassatæ. Presl.

Trichopteris excelsa. Presl. (TAB. XXXIV.)—*Alsophila* (§ *Chnoophora*) *excelsa*. Mart. Ic. Pl. Crypt. Bras. p. 63. tab. 27. 29. f. 1. 2. and tab. 37.—*Polypodium Tænitis*. Roth, Kaulf.—P. Corcovadense. Raddi.

Alsophila, Br. (see Tab. 9 and 21 of this work), is the Genus to which the present is the most nearly allied, and from which its author (Presl) has distinguished it in consequence of the different insertion of the stipites, and the form and closeness of the cicatrices, the dissimilarity of consistence of the frond, and in having the sori affixed to the middle of the parallel veins and veinlets, prominent on both sides, and incrassated at the apex. The species have indeed a very peculiar habit; the petiolated pinnules are always lanceolate, dark green above, pale, but dull and opaque below: the fructifications so copious that they form an uninterrupted line from the base, about equidistant between the costa and the margin, but always stopping short of the point. The hairs of the receptacles are equally present upon one species of *Alsophila* (Presl), namely, *A. pruinata*, which is however abundantly different in other respects.

The species are *T. excelsa*, *denticulata*, and *elegans*, Presl.

Fig. 1. Portion of a pinnule, under side; magn. 5 diam.—f. 2. Sorus; f. 3. Sorus seen from the under side; and f. 4. a vertical section of a sorus; m. 30 diam.—f. 5. Sporangia; m. 100 diam.—f. 6. Sporules not quite ripe; m. 400 diam.—f. 7. Recent hair, and f. 8, one in a dry state, taken from the receptacle; m. 100 diam.

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TAB. XXXV.

NEPHROLEPIS. Schott.

NEPHROLEPIS sp. *Auct.* HUMATÆ sp. *Cav.* ASPIDII sp. *Sw.* HYPOPELTIDIS sp. *Bory.*

Sori subglobosi apici venulæ superioris insidentes. *Indusium* reniforme sinu sub-centrali affixum. *Sporangia* parva longe pedicellata, pedicellis persistentibus pulvinulum efficientibus.—*Rhizoma repens.* Frondes *sparsæ, tenuiter coriaceæ, simpliciter pinnatim divisæ.* Pinnæ *revera cum rachide articulatæ et facile deciduæ.* Venæ *pinnatæ, densissimæ, internæ, apice punctiformi longe a margine frondis terminatæ, bifurcatæ, venula superiori breviori sorifera ab ima basi venæ exoriens.* *Sori margine frondis pinnarum approximati.*—Species *tropicæ et extratropicæ Americanæ, Indicæ, Novo-Hollandicæ, &c.; jam steriles venis venulisque puncto opaco terminatis et pinnis deciduis dignoscendæ. Presl.*

Nephrolepis exaltata. Schott, *Gen. Fil. cum Ic.*—(TAB. XXXV.)—*Aspidium. Sw.*
—*Nephrodium. Br.*

An extremely natural and well-marked Genus, clearly defined by Schott and Presl, and comprising about 20 species, nearly allied in general habit.

Fig. 1. Under side of a pinna; *magn.* 5 diam.—*f. 2.* Portion of the same; *m.* 10 diam.—*f. 3.* *Indusium* turned back from a young sorus; *m.* 10 diam.—*f. 4.* Vertical section of a ripe sorus; *do.*—*f. 5.* *Indusium* turned back from a ripe sorus; *do.*—*f. 6.* Transverse section of a rachis of the frond, and *f. 7.* Vertical section of a portion of the same; *m.* 10 diam.—*f. 8.* Very young sporangia; *m.* 100 diam.—*f. 9.* Ripe sporangia; *do.*—*f. 10.* Ripe sporules; *m.* 400 diam.

THE HISTORY OF THE

REPUBLIC OF THE UNITED STATES

OF AMERICA

FROM THE FIRST SETTLEMENTS TO THE PRESENT TIME

BY

JOHN ADAMS

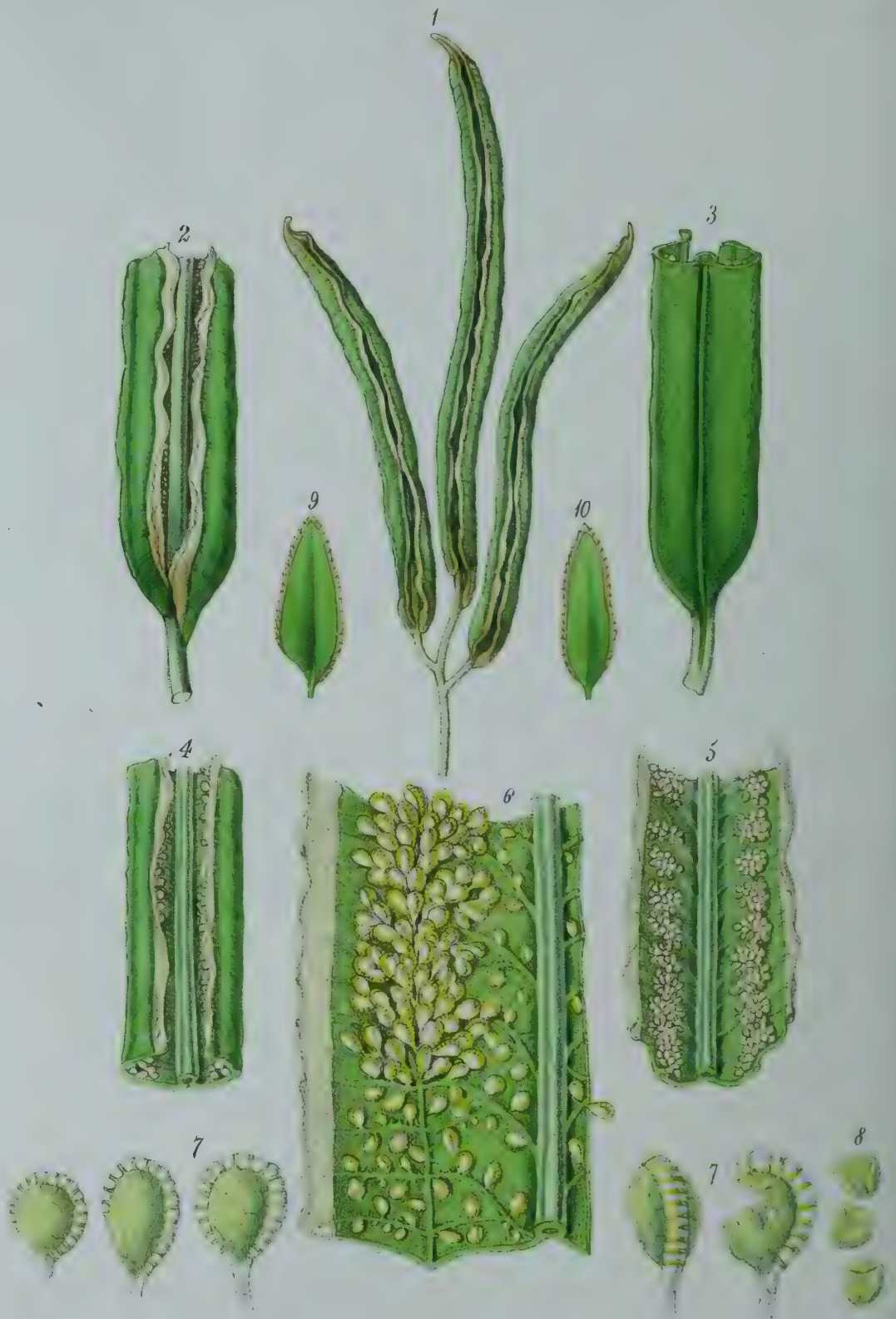
OF THE MASSACHUSETTS

IN TWO VOLUMES

VOLUME I

THE FIRST SETTLEMENTS TO THE REVOLUTION

NEW-YORK: PRINTED BY J. B. ALLEN, 1790



TAB. XXXVI.

CERATODACTYLIS. *J. Smith, mst.*

Pinnulæ fertiles mutato contractæ; marginibus revolutis membranaceis indusiæformibus, dorsum totum pinnulæ tegentibus. *Sori* lineares, furcatæ. *Sporangia* venas parallelas furcatas per totam longitudinem occupantia.—*Filix Mexicana*. Frondes stipitatæ $2\frac{1}{2}$ -pedales, glabræ, tripinnatæ. Pinnæ superiores mutato contractæ, fertiles. Pinnulæ steriles, alternæ, petiolatæ, oblongo-ellipticæ, basi obliquæ, serrulatæ, venosæ, venis subsimpliciter dichotome ramosæ: fertiles contractæ, lineares, subfalcatæ, non raro ternatim divisæ. *J. Smith, mst.*

Ceratodactylis osmundioides. J. Sm. (TAB. XXXVI.)

"The above character is drawn up from a single specimen of a Fern from Mexico, given to me by Mr Lambert. The sterile portion of the frond agreeing with *Osmunda* in habit, and the fertile pinnules with *Ceratopteris*, and the position of the sporangia and form of the sori with *Cryptogramma*, it is difficult to say what is its nearest affinity. In my own mst. arrangement, I place it with those Genera which have an universal marginal indusium, formed by the revolute margin of the frond, which is always contracted; as *Ceratopteris*, *Struthiopteris*, *Cryptogramma*, &c."

What is here stated is entirely from Mr Smith's mst., the plant being wholly unknown to me. Mr Smith further observes, that the apparent longitudinal vein, crossing the whole of the nerves between the costa and the margin (as seen at *f. 6*), is in reality occasioned by the sudden duplicature of that part of the pinna.

Fig. 1. Under surface of a fertile portion of the frond; *magn.* 3 diam.—*f. 2.* A portion of the under side, and *f. 3.* of the upper side of the same; *f. 4.* Portion of the under surface, with the margins (naturally) a little more spreading, and *f. 5.* with the margins forced open; *m.* 10 diam.—*f. 6.* Smaller portion of the same, with the margin quite spread open; *m.* 30 diam.—*f. 7. 8.* Sporangia in different states; *m.* 100 diam.—*f. 9. 10.* Separate pinnules from the sterile portion of the frond; *nat. size.*



TAB. XXXVII.

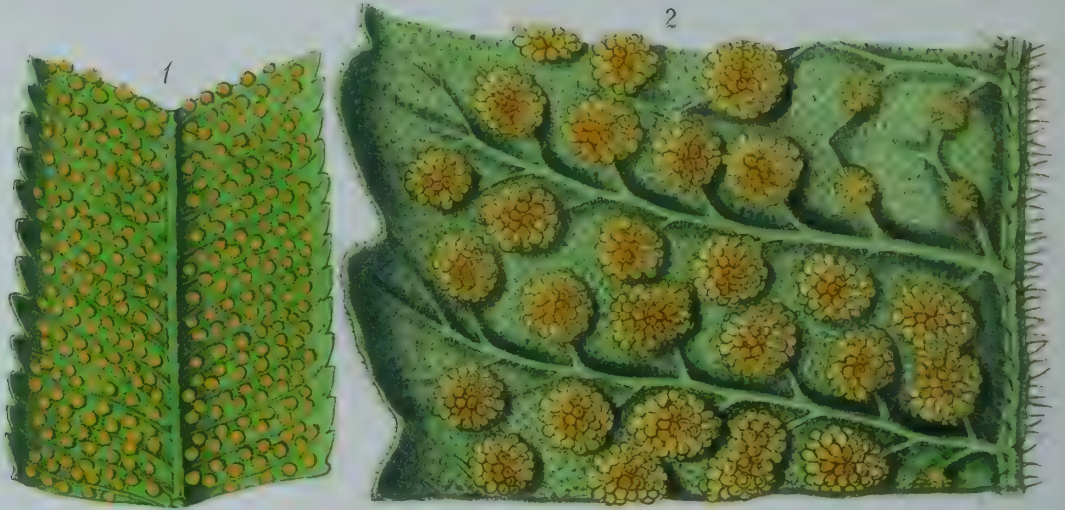
GYMNOGRAMMA. *Desv.*

Sori nudi, dorso venarum venularumque insidentes, tenues, demum confluentes et totam paginam frondis inferiorem obtegentes. *Capsulæ* breviter pedicellatæ aut subsessiles.—*Frondes fasciculatæ, simplices v. varie divisæ, nunc subtus tomento farinaceo colorato. Venæ pinnatæ, internæ, tenuissimæ, aut creberrimæ, flabellato-multifurcatæ, aut distantes, venulis divergentibus. Venulæ apice libero punctiformi aut acutissimo desinentes.*—Species pleræque tropicæ.

Gymnogramma calomelanos. Kaulf. (TAB. XXXVII.)—Acrostichum. Linn.

Of the limits of this Genus I do not at present attempt to speak. Presl includes a very heterogeneous mixture, some of which have no natural affinity with the generally acknowledged *Gymnogramma*, such as *Cryptogramma Bruniona*, and *acrostichoides*, Br., (thus widely separated from *C. crispa*, Br., *Allosorus*, Presl,) the *Grammitis Ceterach* of Swartz, &c.; the latter of which may perhaps, with more justice, be placed very near to, if not united with, *Asplenium*. (See Hook. Ic. Pl. t. 105, under *Aspl. Dalhousiæ*.)

Fig. 1. Under surface of a pinna; *magn.* 10 diam.—*f. 2.* Smaller portion of do.; *m.* 20 diam.—*f. 3.* The same, with most of the sporangia removed; *m.* 20 diam.—*f. 4.* Sporangia in different stages; *m.* 100 diam.—*f. 5.* Ripe sporangium, bursting; *do.*—*f. 6.* Ripe sporules; *do.*—*f. 7.* Some clusters of the white powdery excretion from the under surface of the frond; *m.* 100 diam.



TAB. XXXVIII.

GONIOPTERIS. *Presl.*

Sori subrotundi, nudi, medio dorsi venarum insidentes, parvi.—*Rhizoma subrotundum.* Frondes fasciculatæ, herbacæ, aut tenuiter coriacæ, pinnatæ. Venæ pinnatæ, simplices, supra immersæ, subtus elevatae, frondem lineantes, apice obtuso libero breviter ante marginem frondis desinentes, infima una quatuor superiores et tot oppositæ inferiores in arcum acutangulum anastomosantes, venula ex apice anguli in sinum laciniarum frondis aut in sinum anguli mox superiores excurrente, subinde apice clavatæ.—Species omnes intratropicæ, Asiaticæ et Americanæ, genus distinctissimum cum *Nephrodio* *Aspidiacearum* et cum *Meniscio* *Grammitidearum* cognatum efficientes; a priori differt *Goniopteris* *soris nudis*, a posteriore *soris globosis*. Sporangia sæpe hispida. *Presl.*

Goniopteris crenata. Presl. (TAB. XXXVIII.)—*Polypodium. Sw.*—*Lastræa. Bory.*

This Genus, well distinguished by the naked globose sori, and peculiar nervation, together with a certain natural character, is divided into two groups by *Presl.*

§ I. Vena utrinque infima in arcum anastomosans; venula ex apice anguli in sinum laciniarum frondis excurrente;—comprising about 20 species.

§ II. Venæ utrinque inferiores plures (duo-tres-quatuor) in arcus anastomosantes, venula ex apice anguli in sinum arcus superioris excurrente vel subinde libera, illa ex angulo supremo in sinum laciniarum frondis excurrente;—to which belongs our present species, and, according to *Presl.*, about 8 others.

Fig. 1. Under side of a portion of the frond; *nat. size.*—*f. 2.* Small portion of the same; *magn. 5 diam.*—*f. 3.* Perfect sorus; *m. 20 diam.*—*f. 4.* Vertical section of the same; *m. 20 diam.*—*f. 5.* Sporangia in various stages; *m. 100 diam.*—*f. 6.* Ripe sporules; *m. 200 diam.*



TAB. XXXIX.

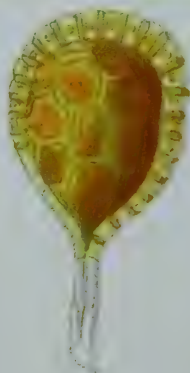
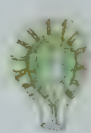
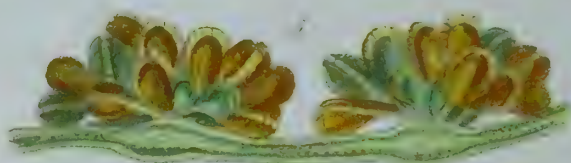
MERTENSIA. Willd. Presl.

Sori dorso medio venulæ superioris (rarissime et inferioris) inserti, globosi, superficiales, tri-sexcapsulares. *Sporangia* globoso-pyriformia, sessilia, citissime decidua, receptaculo punctiformi elevato inserta.—*Rhizoma repens*. Frondes *sparsæ*, rarissime simpliciter pinnatæ, sæpissime dichotomæ, ramis bipinnatis, pinnulis angustis coriaceis. Venæ pinnatæ, uni-bi-trifurcatæ, subtus prominulæ, in marginem excurrentes, venulis aut divergentibus (in simpliciter furcatis) aut parallelis. Pinnulæ aut ad basin pinnarum desinunt aut in rachide quoque adsunt (decurrunt).

Mertensia gigantea. Presl. (TAB. XXXIX.)—*Gleichenia*. Wall.

Brown and others unite *Mertensia* with *Gleichenia*; but the two Genera differ in habit as well as in fructification, as we shortly hope to exhibit by figures. The species of *Mertensia* are mostly tropical, and the recorded species are with difficulty to be distinguished one from another.

Fig. 1. Under side of a portion of a frond; *magn.* 4 diam.—*f. 2.* do. of a small portion of the same; *m.* 8 diam.—*f. 3.* A small portion of do.; *m.* 20. diam.—*f. 4.* Sporangia in different stages of maturity, and in different points of view; *m.* 100 diam.—*f. 5.* Sporules; *m.* 200 diam.



TAB. XL.

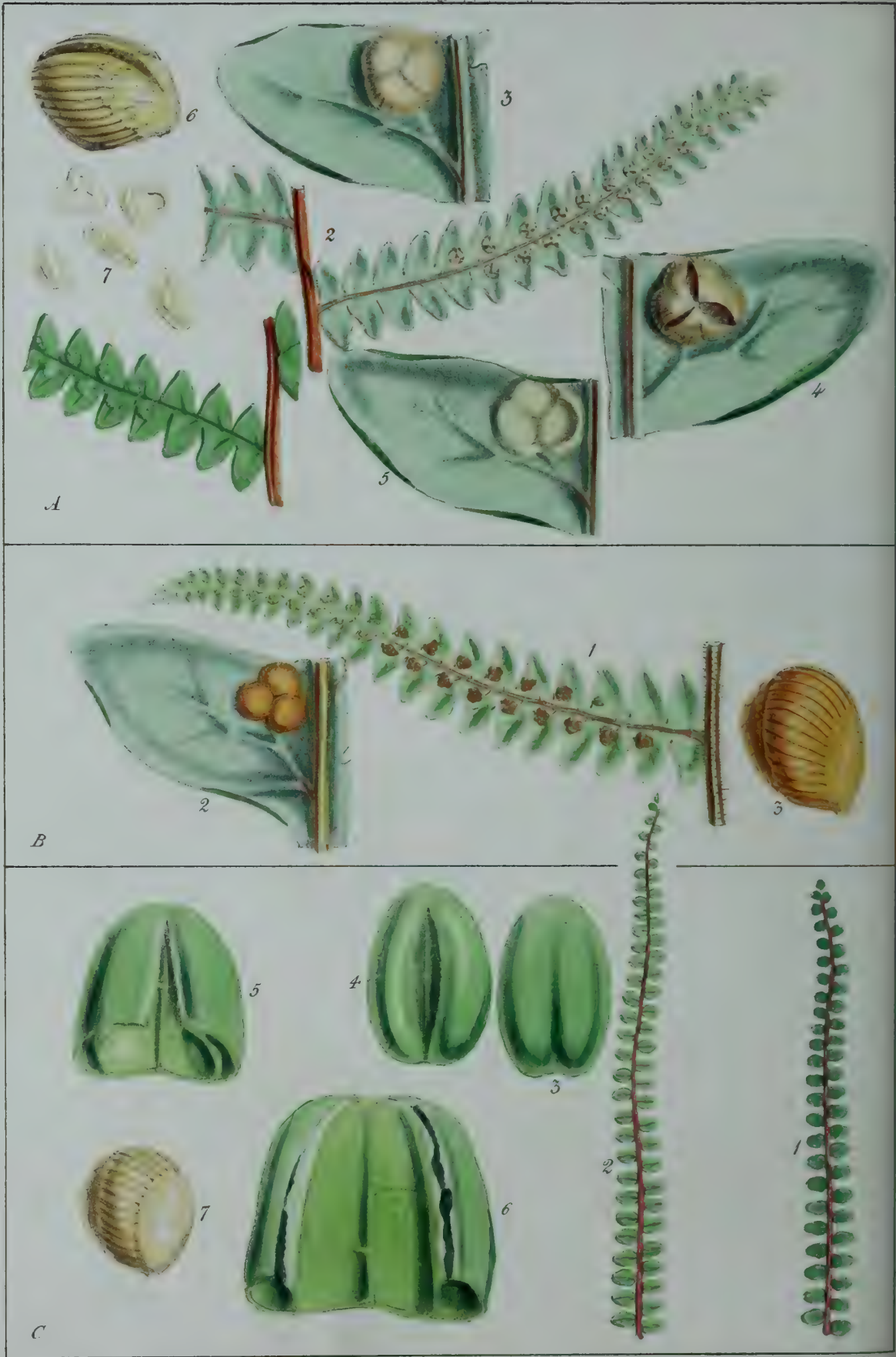
MENISCIUM. *Schreb.*

Sori dorso venularum transversarum insidentes, breviter lineares aut oblongo-lineares, demum subinde confluentes.—*Caulis arborescens aut rhizoma subrotundum.* Frondes fasciculatæ, tenuiter coriaceæ, pinnatæ. Venæ pinnatæ, creberrimæ costæ-formes, parallele, apice obtuso incrassato libero desinentes, ramosæ. Venulæ pinnatæ, elevatæ, oppositæ in arcum triangularem plus minus acutum anastomosantes, venulam secundariam liberam clavatam ex apice cujuslibet arcus emittentes.—Species intratropicæ, Asiaticæ et Americanæ. *Presl.*

Meniscium palustre. *Raddi.* (TAB. XL.)

Meniscium triphyllum, Sw., *M. angustifolium*, Willd., *M. serratum*, Cav., *M. cuspidatum*, Bl., *M. reticulatum*, Sw., and *M. arborescens*, Humb., besides the one here figured, are the species of this Genus enumerated by *Presl.*

Fig. 1. Under surface, and *f. 2.* upper surface of a portion of a frond; *magn.* 2 diam.—*f. 3.* Under surface of a smaller portion; *m.* 10 diam.—*f. 4.* The same, with most of the sporangia removed; *m.* 10 diam.—*f. 5.* Vertical section of two sori; *m.* 20 diam.—*f. 6.* 6. Sporangia in various stages; *m.* 100 diam.—*f. 7.* Sporules; *m.* 200 diam.



TAB. XLI. A. B.

GLEICHENIA. Sw.

GLEICHENIA et CALYMELLA. Presl.—GLEICHENIÆ sp. Br.

Sorus solitarius, superficialis vel subimmersus, depresso-globosus, tri-quadricapsularis, apici venæ infimæ superioris insertus. Sporangia sessilia subgibbosa, oblique latissimo-annulata, verticaliter et regulariter dehiscentia. Sporulæ subtrigonæ.—*Rhizoma repens. Frondes dichotomæ, ramis bipinnatis, pinnulis subcoriaceis, ovatis, rotundatis, subtus concavis vel etiam saccatis. Venæ pinnatæ, simplices, alternæ, ante marginem evanescentes, infimo superiore sorifero.*—*Filices Capenses et Novæ Hollandicæ.*

Subgen. I. EUGLEICHENIA. *Sorus subimmersus.*—*Gleichenia. Presl.*

Gleichenia polypodioides. Sw. (TAB. NOSTR. XLI. A.)

Subgen. II. CALYMELLA. *Sorus superficialis, non immersus.*—*Calymella. Presl.*

Gleichenia microphylla. Br.—(TAB. NOSTR. XLI. B.)

The learned Brown has included in one Genus the *Mertensia* of Willd., (TAB. NOSTR. XXXIX.), *Gleichenia. Sw.*, and *Calymella* of Presl; and indeed it must be confessed that the latter Genus seems to unite the three, having the exserted (or superficial) sporangia of *Mertensia*, and the habit of *Gleichenia*.

TAB. XLI. A. GLEICHENIA POLYPODIOIDES. *Fig. 1.* Portion of the upper, and *f. 2.* underside of a frond; *f. 3.* Pinnule with young sorus; *f. 4.* do. with ripe sorus; *f. 5.* do. with the pit or hollow from whence the sorus has fallen; *f. 6.* Single Sporangium; *f. 7.* Sporules:—all more or less magnified.—TAB. XLI. B. GLEICHENIA MICROPHYLLA.—*Fig. 1.* Pinna seen from beneath; *f. 2.* Pinnule with sorus; *f. 3.* Sporangium:—all more or less magnified.

TAB. XLI. C.

PLATYZOMA. Br.

Sporangia in soro punctiformi dorsali solitaria definita sessilia, pulvere intermixta. Indusium e marginibus revolutis pinnæ.—*Filix Novæ Hollandiæ, glabra. Rhizoma repens, squamosum. Stipites indivisi. Frondes pinnatæ, pinnis numerosissimis, distinctis, orbiculatis, integerrimis, minutis, subtus pulvere sulphureo tectis. Sporangia in soro pauca. Sporulæ majusculæ. Frondes ex eodem rhizomate compresso-filiformes, divisæ. Br.*

Platyzoma microphyllum. Br.—(TAB. NOSTR. XLI. C.)

A Genus of one species, a native of the tropical parts of New Holland. Mr Brown observes its close affinity to *Gleichenia*, from which it differs more by the undivided stipites than by any difference in the fructification. Presl says that the sori are placed at the extremity of the horizontal pinnated veins; but I have failed to discover their point of insertion. The sporangia are very deciduous, and I have only found them loose in the pinnule. I observe the folded margin of the frond to be double.

TAB. XLI. C. PLATYZOMA MICROPHYLLUM. *Fig. 1, 2.* Portions of the frond; *f. 3, 4.* Pinnules; *f. 5, 6.* Sections of do.; *f. 7.* Sporangium:—all more or less magnified.



TAB. XLII. A.

HEMITELIA. Presl.

HEMITELIA sp. Br.—CYATHEÆ sp. Auct.

Sorus in singula lacinia solitarius, ad basin venæ infimæ superioris insertus. *Indusium* ? squama ovata, concava, lacera, ad basin inferiorem sita. *Sporangia* numerosa, imbricata, sessilia, late annulata : annulo verticali. *Receptaculum* elongatum, villosum. Filix *arborescens* Capensis. Frondes *amplæ, tripinnatæ; pin-nulæ* *profunde pinnatifidæ, oblongæ, inciso-serratæ*; venæ *pinnatæ simplices, infe-riores squamulosæ*.

Hemitelia Capensis. Br.—(TAB. XLII. A.)

Fig. 1. Pinna; *f.* 2. Portion of do.; *f.* 3. Sorus; *f.* 4. Receptacle; *f.* 5, 6, 7. Sporangia; *f.* 8. Scale or indusium (?) from the sorus.

TAB. XLII. B.

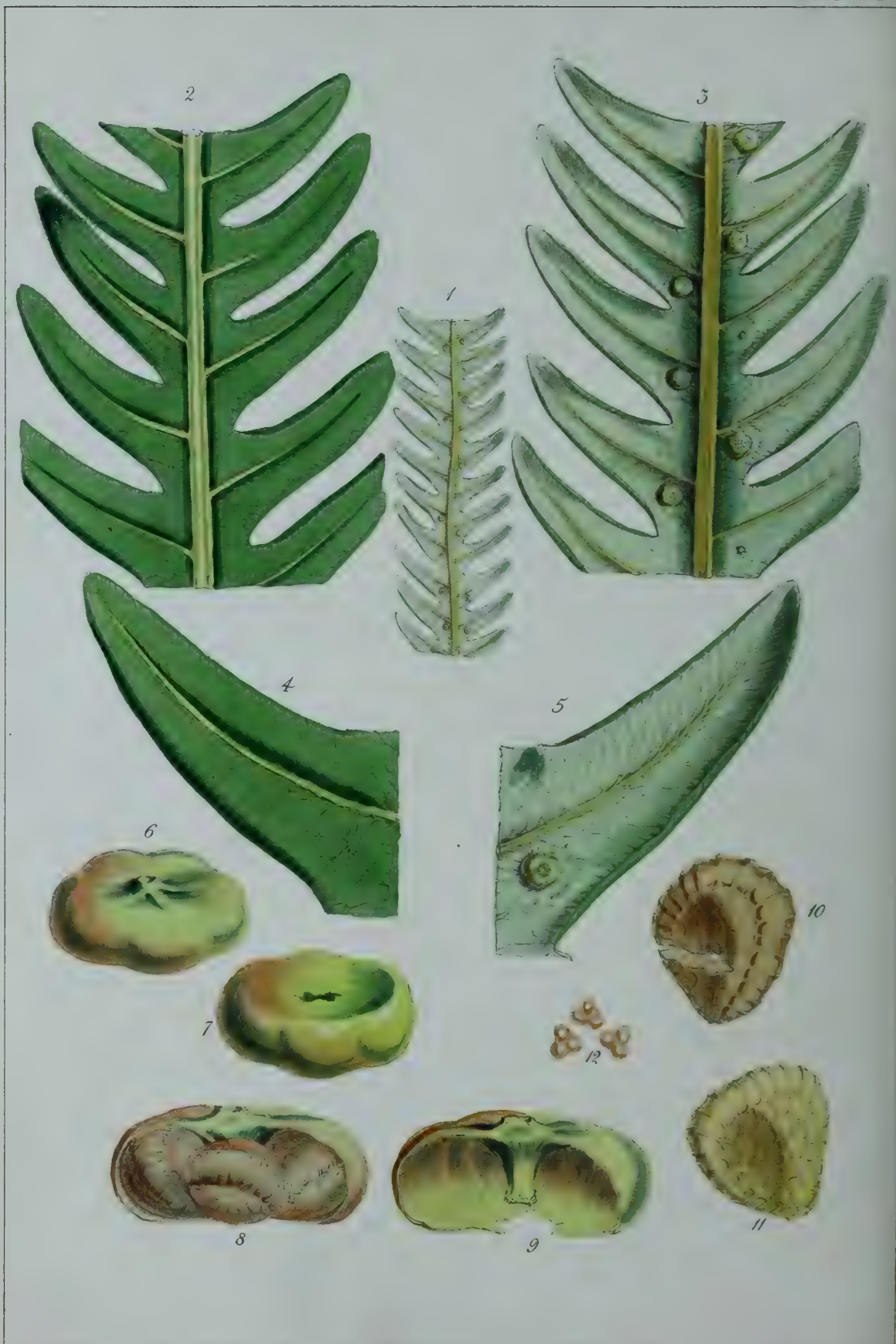
METAXYA. Presl.

Sori 2—4, globosi, nudi, ad basin venarum prope costam vel infra medium venarum sita. *Sporangia* sessilia, pilis longis articulatis immixta. *Receptaculum* puncti-forme.—Filix *arborescens*. Frondes *pinnatæ*. Pinnæ *subcoriaceæ, nitidæ, acuminatæ, acumine serrato*. Venæ *simplices vel furcatæ ad marginem attingentes*.

Metaxya rostrata. Pr.—(TAB. XLII. B.) Polypodium rostratum. Willd. P. Humboldtii. Poir. P. blechnoides. Sw. Aspidium rostratum. H. B. K. Alsophila rostrata. Mart.

A very handsome Genus of S. American Ferns, allied in habit to *Trichopteris*. (TAB. NOSTR. XXXIV.)

TAB. XLII. B. METAXYA ROSTRATA.—*Fig.* 1. Pinna, with fructification; *f.* 2. Portion of a pinna; *f.* 3. Sorus; *f.* 4, 5. Sporangia; *f.* 6. Hairs from among the capsules; *f.* 7. Sporules:—more or less magnified.



TAB. XLIII.

MATONIA. Br.

Sori dorsales, solitarii, rarius bini, ad basin inferiorem (nunc superiorem) laciniaë siti, rotundi, e puncto confluentiaë venularum plurium orti. Indusium orbiculatum, peltatum, margine insigniter inflexum, subgloboso-hemisphæricum, depressum, medio umbonatum, stipitatum. Sporangia subsex, ad basin stipitis inserta, sessilia, late oblique annulata, annulo fere completo.—Sporulae obtuse trigonæ.—Filix Malaccensis; fronde bipinnata coriacea, subtus glauca; pinnis secundis profunde pinnatifidis; laciniiis obtusis. Venæ pinnatæ utrinque prominentes, simplices vel furcatæ, ad marginem attingentes, basin versus anastomosantes, et ad soros radiatim convergentes, punctoque insertionis confluentes.

Matonia pectinata. Br. in Wall. Pl. Asiat. Rar. I. t. 16.—(TAB. XLIII.)

One of the rarest and most interesting of Ferns known to us. It has been hitherto only found near the summit of Mount Ophir, about thirty-six miles from the town of Malacca, by Col. W. Farquhar; and the specimen described by Dr Wallich is still, we believe, as that gentleman stated it to be, the only one in Europe. Dr Wallich favoured me with a single pinna of that plant, from which our figures are made. I find the indusium to be pretty regularly, but obscurely, 6-lobed, and containing six sporangia: the margin so completely involute as to reach the base of the stipes, and even to be united with it, thus closed on every side, and when removed only exhibiting a slightly torn aperture where it joined the stipes (as shown at *f. 7.*) The sporangia, with the broad and slightly oblique annulus, resemble those of the *Cyatheaceæ*: the Indusium is, as far as I know, quite peculiar to this Genus.

Fig. 1. Portion of a fertile pinna, seen from beneath: *nat. size*; *f. 2.* Lesser portion, upper side; *f. 3.* Do. under side; *f. 4.* Segment of do. upper side; *f. 5.* do. Under side; *f. 6.* Upper, and *f. 7.* under view of a sorus; *f. 8.* Section of a sorus showing the insertion of the sporangia; *f. 9.* Section of indusium; *f. 10, 11.* Sporangia; *f. 12.* Sporules:—more or less *magnified*.



A



B





Polypodiaceæ.

TAB. XLIV. A.

THYRSOPTERIS. *Kunze.*

Pinnæ steriles a fertilibus dissimiles. *Sori* in rachibus portionis frondis fertilis, bi-tripinnati, pedunculati, globosi, subsecundi. *Indusium* inferum, globoso-hemisphæricum, coriaceum, ore apertum, margine subintegerrimo. *Receptaculum* magnum, globosum, spongiosum. *Sporangia* sessilia, imbricata, annulo magno, compresso, subobliquo, incompleto cincta. *Sporulæ* trilobæ.—*Filix arborescens*, *Ins.* Juan Fernandez. *Frons supra-decomposita, coriacea, nitida.* *Pinnæ steriles fertilesque in eadem stirpe, bi-tripinnatifidæ, laciniis ultimis cuneato-lanceolatis obtuse serratis.* *Venæ internæ, immersæ, simplices vel furcatæ, paullo ante apicem evanescentes.* *Pinnæ fertiles similiter compositæ.* *Rachis compressa, linea media exarata, ramis angustis, ultimis apice soriferis, ita sori quasi pedunculati.*

Thyrsopteris elegans. *Kunze.*—(TAB. XLIV. A.)

In my specimens of this very elegant Fern, the fertile and sterile portions are on the same plant, and sometimes the lower half of a branch or primary pinna is fertile, the upper half sterile. If the *Cyatheaceæ* be retained as a group or Tribe, this plant seems to have as strong a claim to rank with them as with the *Polypodiaceæ*.

TAB. XLIV. A. THYRSOPTERIS ELEGANS. *Fig.* 1. Sterile, and *f.* 2. fertile portion of a plant, slightly magnified :—*f.* 3, 4. *Sori* ; *f.* 5. Section of an indusium ; *f.* 6, 7, 8. *Sporangia* ; *f.* 9. *Sporules* : more or less magnified.

TAB. XLIV. B.

DEPARIA. *Hook. et Grev.*

Sori hemisphærici, marginales, exserti, in dentibus venas terminantibus siti. *Indusium* inferum, pateriforme, membranaceum (textura frondis), ore patulo, sublacero. *Receptaculum* parvum. *Sporangia* plurima, longe stipitata exserta annulo incompleto cincta. *Sporulæ* subovales.—*Filix Insulas Sandvicences hospitans.* *Frondes amplæ, (simpliciter) pinnatæ, pinnis elongatis profunde pinnatifidis tenui-membranaceis, minute reticulatis, dentatis.* *Venæ elevatæ pinnatæ, simplices, vel rarius furcatæ, apice ultra marginem frondis soriferæ.*

Deparia prolifera.—(TAB. XLIV. B.) *Deparia Macraei.* *Hook. et Grev. Ic. Fil. t. 154.* *Dicksonia prolifera.* *Kaulf.* *Cibotium proliferum.* *Presl.*

Presl has referred this remarkable plant to the Genus *Cibotium*, (TAB. NOSTR. XXV.), but such an alliance appears to me quite contrary to nature : for in the whole habit of our *Deparia*, in the texture of its frond, in the structure of its indusia, and in their insertion with respect to the nerve, it is quite at variance with *Cibotium*.

TAB. XLIV. B. DEPARIA PROLIFERA.—*Fig.* 1. Portion of a fertile pinna : *nat. size* ; *f.* 2. Smaller portion ; *f.* 3. *Sorus* ; *f.* 4, 5. *Capsules* ; *f.* 6. *Seeds* :—magnified.





TAB. XLV. A.

LASTREA. Presl.

ASPIDII sp. Sw. et Auct. NEPHRODII sp. Mich.

Sori in medio dorsi venarum simplicium vel venulæ superioris inserti, globosi. *Indusium* reniforme, sinu affixum.—Frondes *fasciculatæ, herbacæ, pinnatim divisæ*. Venæ *pinnatæ, internæ, aut subtus prominulæ, supra immersæ, ante marginem apice obtuso terminatæ, liberæ, simplices, vel furcatæ, vel pinnatum ramosæ*. Presl.

I. Venæ omnes simplices infimæ in sinum laciniarum excurrentes. Presl.

Lastrea patens, Presl.—(TAB. XLV. A.).—*Aspidium patens*. Sw.

Fig. 1. Portion of fertile pinna: nat. size; f. 3. Smaller portion of the same:—magnified.

II. Venæ omnes aut inferiores furcatæ, infimæ in sinu laciniarum excurrentes. Presl.

Lastrea Thelypteris. Presl.—(TAB. XLV. A.).—*Aspidium*. Sw.

Fig. 2. Segment of a pinna:—magnified.

III. Venæ inferiores pinnatim ramosæ sori in venulæ infima superiori. Presl.

Lastrea cristata.—Presl.—(TAB. XLV. A.).—*Aspidium cristatum*. Sw.

Fig. 4. Sterile segments of a pinna; f. 5. Fertile do.; f. 6. Sorus; f. 7, 8. Capsules; f. 9. seeds:—magnified.

An extensive Genus, even as now limited by Swartz; and very nearly allied to *Nephrodium*.

TAB. XLV. B.

OLEANDRA. Cav. Presl.

Sori globosi dorso venæ venulæve præcipue basin versus siti. *Indusium* reniforme, sinu affixum.—Filices *tropicæ*. Rhizoma *repens*. Frondes *sparsæ, simplices, lanceolatæ, acuminatæ, integerrimæ, membranaceo-coriacæ; stipite nodoso-articulato*. Venæ *pinnatæ, arcte approximatae, horizontales, simplices vel prope basin furcatæ ad marginem attingentes*.

Oleandra pilosa (n. sp.); stipite ad basin articulato, fronde subtus pubescenti-hirsuta, indusiis longe ciliatis.—(TAB. XLV. B.)

Fig. 1. Lower portion of a fertile frond, nat. size; f. 2. Smaller portion of the same; f. 3. Sorus; f. 4, 5. Capsules; f. 6. Seeds.

HAB. Berbice, British Guiana. *Schomburgk. n. 416*.—A highly beautiful and a very natural Genus, of few species. The fronds present a singularly satiny appearance. In one species (*O. Wallichii*, Hook. *Exot. Bot. t. 5.*), the sori form a single series in a compact line, close to the costa, and even in those species where the sori are several on each nerve, upon looking at the general mass, they will be seen to lie in two or more irregular and undulating series.

A



B



TAB. XLVI. A.

OSMUNDA. Sw.

Sporangia globosa laxè reticulata pedicellata dorso annulo obsoleto transversali gibbosa hinc (facie externa) a basi ad gibberem dorsalem longitudinaliter dehiscencia, in pinnas mutato-contractas laterales terminalesve coacervata. *Sporulæ* ovales, puncto impressæ.—Frondes *fasciculatæ pinnatæ*, pinnis magis minusve coriaceis integris v. pinnatifidis vel iterum pinnatis. Venæ pinnatæ simplices vel varie furcatæ utrinque prominulæ, ad marginem excurrentes.

Osmunda regalis. L.—(TAB. XLVI. A.)

A Genus of few species, inhabiting both temperate and tropical climates.

TAB. XLIV. A. Fig. 1, 2. Fertile portions, slightly magnified; f. 3. Section of a fertile rachis; f. 4, 5, 6. Sporangia; f. 7. Sporules more or less magnified.

TAB. XLVI. B.

TODEA. Willd.

Sporangia globosa, laxè reticulata, pedicellata, dorso annulo obsoleto transversali gibbosa hinc (facie externa) a basi ad gibberem dorsalem longitudinaliter dehiscencia, subtus in venas simplices vel furcatas frondium insidentes. *Sporulæ* ovales puncto impressæ.—Frondes *fasciculatæ? membranaceæ vel coriaceæ*. Venæ subtus elevatæ, pinnatæ, simplices vel furcatæ, ad marginem vel dentium apices attingentes.

I. EUTODEA. Frondes coriaceæ. *Sporangia* densissima in maculas oblongas demum totam inferiorem paginam pinnularum vel laciniarum obtegentia. Species Africanæ vel Australasicæ.

Todea Africana, Willd. (TAB. XLVI. B.)

Fig. 1. Small portion of a fertile frond from which the sporangia are removed; f. 2. Another portion with the sporangia; f. 3, 4, 5. Sporangia; f. 6. Sporules:—more or less magnified.

Of this division, there is, besides, *T. rivularis*, Sieb., and Kunze, *Analect. Pterid.* p. 7. t. 4.

II. HYMENOPHYLLOIDES. Frondes herbaceæ, subpellucidæ. *Sporangia* sparsa. Species Novæ Zelandiæ.

Todea hymenophylloides, Rich.—(TAB. XLVI. B.)—*T. pellucida*. Carm in Hook. Bot. Misc. t. 232.

Fig. 7. Fertile pinna; f. 8. Capsule; f. 9. Sporules.

Of this division, so different in habit from the previous one, yet according so well in the structure of the sporangia, and in their insertion, there is also *T. Fraseri*, Hook. et Grev. Ic. Fil. t. 101.—Brown unites *Todea* with *Osmunda*, and makes the following observation. “Quoniam in *Todea*, Willd., capsulæ vere pedicellatæ et cum porro alia species existit iisdem pariter dorsalibus, at fronde pellucida *Trichomanis* instar donata, consultius duxi ambas ad *Osmundam* emandare.” *Prodr.* p. 163.





TAB. XLVII. A.

BOTRYCHIUM. *Sw.*

OSMUNDÆ sp. *Linn.*

Sporangia sessilia, distincta, globosa, coriaceo-carnosa, transversim dehiscentia, in spicam disticham secundam bitripinnatam disposita. *Sporulæ* subrotundæ trilobæ.—*Filices extratropicæ. Radix fasciculata. Stipes basi membranaceo-squamosus. Frons solitaria, herbacea, varie pinnatim divisa. Venæ pinnatæ vel radiatæ, simplices vel furcatæ. Spica composita, pinnata, pedunculata : pedunculus e basi frondis ortus.*

Botrychium Lunaria, Sw. (TAB. XLVII. A.)

Fig. 1. Frond and fertile spike : *nat. size* ; *f. 2.* Pinna ; *f. 3.* Spike ; *f. 4.* Section of the rachis showing the insertion of the *Sporangia* ; *f. 5.* Sporangium ; *f. 6.* Sporules :—more or less *magnified*.

TAB. XLVII. B.

HELMINTHOSTACHYS. *Kaulf.*

Sporangia globosa, coriaceo-carnosa, extus a basi ad medium verticaliter dehiscentia, verticillatim glomerata, rarius solitaria, verticillis appendicibus cristatis pedicellatis in spicam elongatam distiche dispositis. *Sporulæ* subglobosæ.—*Filix Zeylanica, Austro-Caledonica, Indiæ Orientalis, et Mexicana. (Presl.) Radix repens, fibrosa. Frons solitaria, stipitata, digitato-pedata, laciniis elongatis, costatis, venosis. Venæ pinnatæ, bi-trifurcatæ, horizontales, densæ, ad marginem attingentes. Spica composita pedunculata. Pedunculus e basi frondis ortus.*

Helminthostachys Zeylanica.—(TAB. XLVII. B.) *H. dulcis. Kaulf.—Wall. Cat. n. 54. Botrychium. Sw. Osmunda Zeylanica. L. Ophioglossum laciniatum. Rumph. Amb. VI. t. 68. f. 3. Botryopteris Mexicana. Presl, Reliq. Hænk. p. 76. t. 12. f. 1.*

Neither the figures of Kaulfuss, nor of Presl, accord well with the fructification of this beautiful plant, for very splendid specimens of which from Ceylon, I am indebted to Colonel and Mrs Walker. The entire figure, however, and the description of Presl's *Botryopteris Mexicana*, leave me no reason to doubt of its being not only generically, but specifically, the same as our plant ; thus affording another remarkable instance of Ferns, which have been esteemed extremely rare and circumscribed as to their place of growth, being at length found in widely different localities.*

TAB. XLVII. B. *Fig. 1.* Portion of a sterile frond ; *f. 2.* Spike ; *f. 3—7.* Sporangia ; *f. 8.* Sporules :—*magnified*.

* Two instances of this kind I have had elsewhere occasion to record. The *Ophioglossum palmatum*, long considered peculiar to Martinique, has been sent to me from Brazil and the Mauritius ! and the Australian *Tmesipteris truncata*, has lately been detected in California !





TAB. XLVIII. A.
NEPHROLEPIS. Schott.

Fig. A. represents a portion of a pinna of *NEPHROLEPIS PUNCTULATA*, Pr., to show the venation described at our TAB. XXXV, but which the figures there do not so distinctly exhibit.

TAB. XLVIII. B.
NEPHRODIUM. Schott. Presl.

NEPHRODII sp. Br. ASPIDII sp. Auct.

Soriglobosi, medio vel apicem versus dorsi venarum inserti. *Indusium* reniforme, sinu affixum.—Filices *pleræque tropicæ*. Frondes *pinnatæ* (*rarius simplices*,) *pinnis dentatis, serratis vel sæpius pinnatifidis*. Venæ *pinnatæ, simplices, subtus elevatæ, infima (rarius plures inferiores) superior cum infima inferiori proxima in angulum plus minus acutum anastomosans, venula ex angulo superiore in sinum angulorum superiorum vel sæpius in sinum laciniarum excurrente*.

I. Venæ tantum utrinque infimæ in arcum anastomosantes, seu arcus unicus. Presl.

Nephrodium molle. Schott. (TAB. XLVIII. B.)

Fig. 1. Portion of a fertile pinna ; f. 2. Lesser portion of the same ; f. 3. Sorus ; f. 4. Sporangium ; f. 5. Sporules :—more or less magnified.

II. Venæ plures inferiores in arcus anastomosantes, seu arcus plures supra se positi. Presl.

Nephrodium unitum. Hook. et Arn. in Bot. of Beech. Voy. p. 256. (TAB. XLVIII. B.)

Fig. 6. Small portion of a pinna :—magnified.

As now limited by Schott and Presl, the character of this Genus among the *Aspidium* group depends on the union of one or more opposite pairs of the lower veins, so as to form an angle, and the combined nerves are thus continued upwards, so as to reach the sinus of the lobes of the pinna. It includes several exotic species.

TAB. XLVIII. C.
POLYSTICHUM. Schott. Presl.

ASPIDII sp. Auct. TECTARIA, Cav.

Sori subrotundi medio dorsi venarum venalarumque siti. *Indusium* orbiculatum, substipitatum.—Frondes *fasciculatæ plerumque coriaceæ varie pinnatimque divisæ lobatæque, serratæ, serraturis sæpe spinulosis*. Venæ *pinnatæ subimmersæ, rarius simplices, plerumque bi-trifurcatæ*.

Polystichum lobatum. Presl. (TAB. XLVIII. C.) *Aspidum lobatum*. Schkhh.

A numerous Genus, and for the most part a very natural one, and of which our well known *P. Lonchitis* and *P. lobatum* and *aculeatum* may be considered the types, inhabiting hot as well as temperate climates, and of which the species are often very difficult to be distinguished by satisfactory specific marks.

TAB. XLVIII. C.—Fig. 1. Fertile portion of *Polystichum lobatum* : nat. size ; f. 2. Lesser portion of the same ; f. 3. Sterile lobe, to show the venation ; f. 4. Sorus ; f. 5. Sporangium ; f. 6. Sporules :—magnified.





TAB. XLIX. A.

PHANEROPHLEBIA. *Presl.*

Sori medio dorsi venularum insidentes, globosi. *Indusium* orbiculare, peltatum.—

Filix Mexicana. *Frons* herbacea, pinnatim divisa. *Venæ* pinnatæ, internæ, pinnatim ramosæ, *venula infima superiore et infima inferiore libera dorso sorifera, superioribus in arcus inæquales acutos anastomosantes dorso soriferæ, supremæ arcuatim ante marginem frondis desinentes.* *Presl.*

Phanerophlebia nobilis. *Presl.*—(TAB. XLIX. A.)—*Aspidium nobile.* *Schlecht. in Linnæa.*

Portion of a pinna :—*magnified* ; copied from *Presl.*

I am quite unacquainted with this plant ; the only one of its Genus, according to *Presl.*

TAB. XLIX. B.

CYCLODIUM. *Presl.*

ASPIDIUM sp. *Willd. et Auct.*

Sori medio dorsi venarum insidentes, globosi. *Indusium* orbiculare, peltatum, indivisum.—*Frondes* herbacæ, pinnatim divisæ. *Venæ* pinnatæ, indivisæ, internæ, aut subtus prominulæ, inferiores superiores cum inferioribus oppositis in angulum plus minus acutum anastomosantes, *venula ex angulo superiore in sinum angulorum superiorum, suprema in sinum laciniarum excurrente.* *Presl.*

Cyclodium confertum, *Presl.*—(TAB. XLIX. B.)—*Aspidium confertum.* *Kaulf. —Hook. et Grev. Ic. Fil. t. 121.*

Fig. 1. Portion of a sterile pinna : *nat. size* ; *f. 2, 3.* Portions of sterile pinnæ from two different specimens to exhibit the venation ; *f. 4.* Fertile pinna, *nat. size* ; *f. 5.* Portion of the same, the sori being removed to show the venation ; *f. 6.* Sorus ; *f. 7.* Sporangium ; *f. 8.* Sporules :—*magnified.*

Of the three species mentioned by *Presl* as belonging to this Genus *Cyclodium*, I am only, with certainty, acquainted with one, the *C. confertum*, which has a very peculiar aspect, and the fertile fronds dissimilar not only as to size and form, but also as to venation :—the venation, however, is considerably different from that represented by *Presl*, *Tent. Pterid. tab. II. f. 20, 21.*

TAB. XLIX. C.

CYRTOMIUM. *Presl.*

ASPIDIUM sp. *Swartz, Wall.*

Sori globosi. *Indusium* orbiculatum, peltatum.—*Frondes fasciculatæ, pinnatæ, pinnis petiolatis, acuminatis, argute serrulatis, infimis lobatis.* *Venæ* internæ, *tenuæ, in maculas irregulares et inæquales anastomosantes.* *Maculæ costales hexagonoidæ, angulis superioribus uno-tribus venuliferæ.* *Venulæ rectæ, liberæ, acutæ, medio dorsi soriferæ, macularum marginalium apice punctiformi terminatæ.* *Presl.*

Cyrtomium caryotideum. *Presl.*—(TAB. XLIX. C.)—*Aspidium caryotideum.* *Wall.—Hook. et Grev. Ic. Fil. t. 69.*

The only two known species of this Genus are of Indian origin, tropical or subtropical, and have a peculiar habit ; but it must be confessed that their venation approaches very nearly to that of *Cyclodium*.

TAB. XLIX. C. *Fig. 1.* Fertile pinna, *nat. size* ; *f. 2.* Portion of do. ; *f. 3.* Sorus ; *f. 4, 5.* Sporangia ; *f. 6.* Sporules :—more or less *magnified.*



TAB. L.

PARKERIA. Hook.

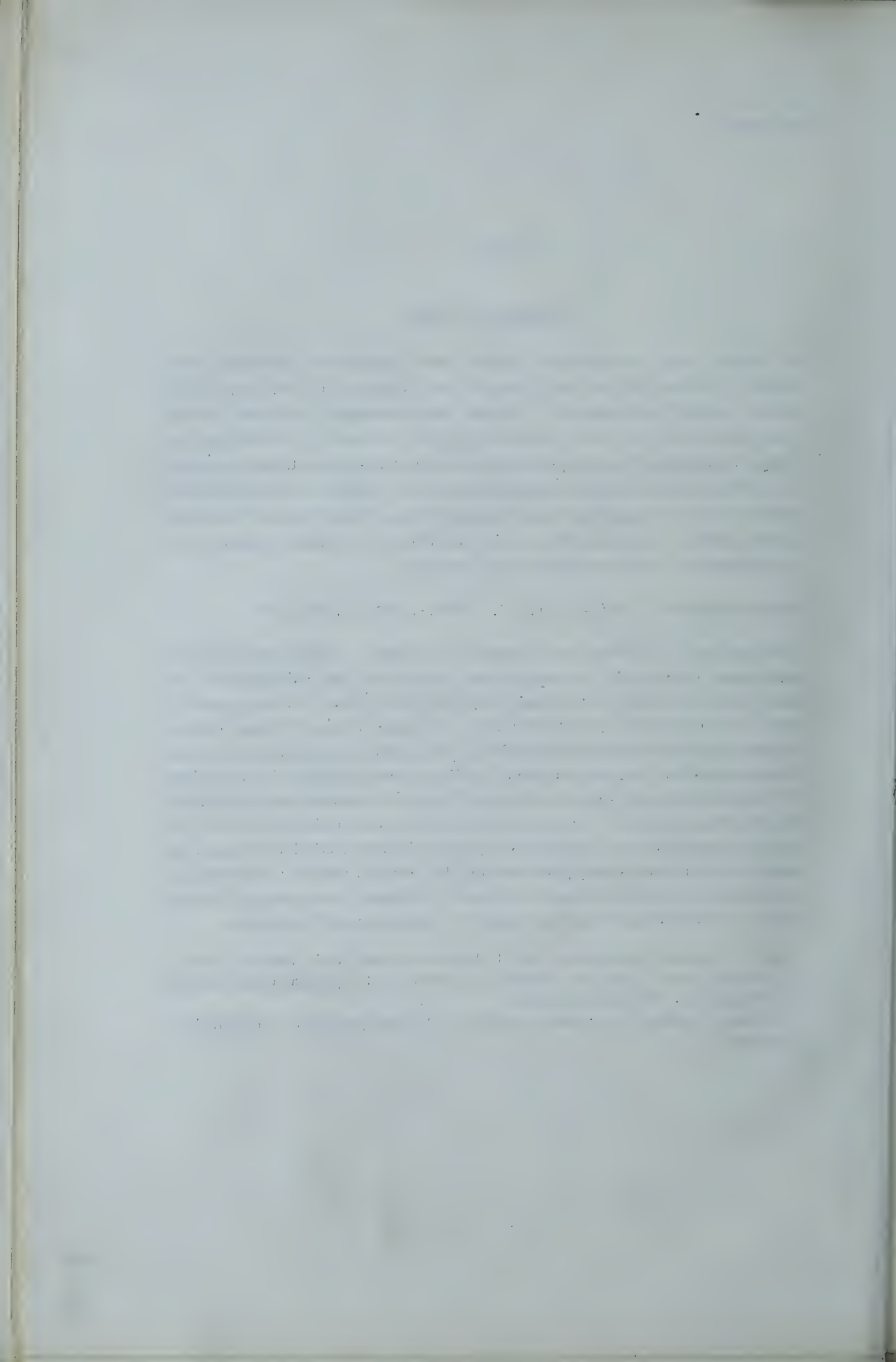
Sori continui, venas longitudinales frondis fertilis occupantes. *Sporangia* laxè disposita, globosa, hyalina, sessilia, annulo lato brevissimo minuto prope basin notata, annulo 5—6-articulato. *Indusium* membranaceum, continuum, e margine frondis revolutæ ortum, sutura longitudinali dehiscens. *Sporulæ* magnæ, obtuse triangulares, hyalinæ, pulcherrime striatæ, striis seriebus tribus concentricis.—*Filix tropico-Americana, aquatica, natans, annua, herbacea*. Frondes *steriles a fertili diversæ, bipinnatifidæ, costatæ, reticulatim venosæ, areolis oblongis hexagonis; fertiles majores 3—4-pinnatifidæ, laciniis linearibus, acutis, costatis, venisque 2—3 longitudinalibus, hic illic anastomosantibus, soriferis*.

Parkeria pteridioides. Hook.—(TAB. L.). Hook. et Grev. *Ic. Fil. t. 97.*

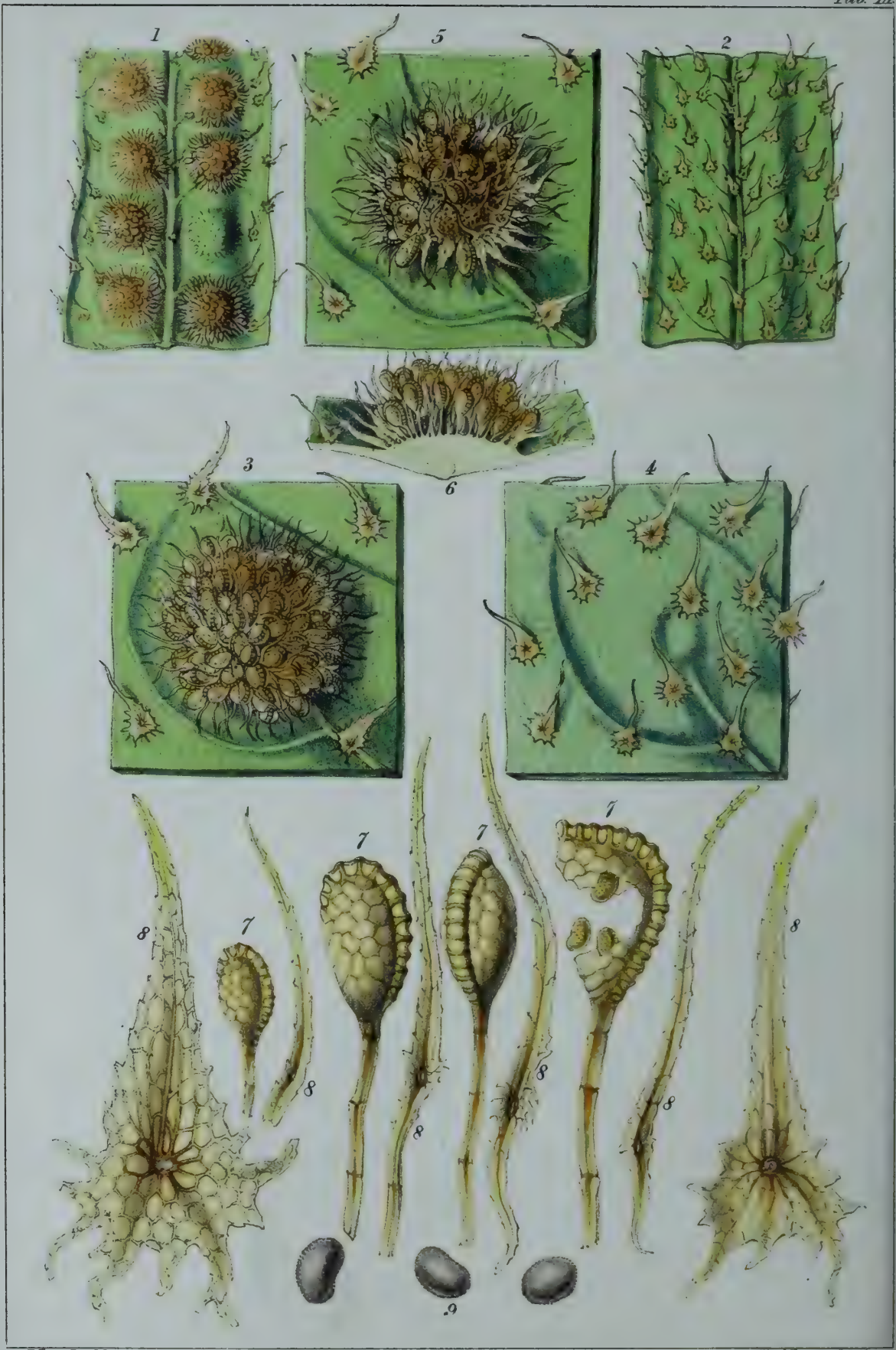
The drawing by Mr Bauer, here represented, was taken, I believe, from specimens communicated by me to Mr J. Smith, at Kew, who remarks, that “the figures of Mr Bauer confirm an opinion he had already entertained, that *Parkeria* was not generically distinct from *Ceratopteris*.” (TAB. NOSTR. XII). In justice to myself I must observe, that after repeated examinations of different specimens, and at various times, I do not find the appearance of the annulus to be such as Mr Bauer’s drawing exhibits it, but precisely as it is figured in the *Icones Filicum*, above quoted; where the sporangia are given with the most scrupulous exactness. In every sporangium that has come under my inspection, the annulus is reduced to a very small nearly quadrangular spot, marked with about 5—6 transverse lines, not very closely placed (see Fig. B.); nor do I perceive a further trace of an annulus above or below that spot, as depicted by Mr Bauer, whose accuracy, however, in this, as in all his botanical analyses, cannot for a moment be called in question.

TAB. L. PARKERIA PTERIDIROIDES. Fig. 1. Portion of a fertile frond, magnified 4 diam.; f. 2, 3. Smaller portion of the same, magnified 16 diameters; f. 4. Sporangia and sporules, magnified 200 diameters. (Mr Bauer’s drawing.)

A. Portion of a fertile frond to show the venation, and B. Sporangium, (from our own drawing:)—magnified.









TAB. LI.

MARGINARIA PILOSELLOIDES. *Presl.*

GONIOPHLEBIUM, *J. Sm.* POLYPODIUM. *Auct.*

This belongs to the Genus *Marginaria*, according to *Presl*, whose character has been already given at TAB. XIV. It is figured here, as one of Mr Bauer's beautiful drawings, and for the sake of introducing Mr John Smith's remarks, namely, that "he considers *Marginaria* and *Goniophlebium* of *Presl*, to belong to the same Genus, agreeing in their venation and fructification: the greatest peculiarity being in habit, according to which he divides the species as follows:—GONIOPHLEBIUM,—* *Lopholepis*. Ex. *G. pilloselloides*. *G. ciliatum*. *G. tectum*. *G. vacciniifolium*. (Polypodium of authors. *Marginaria*. § 1. *Pleurogonium*. *Presl*).—** *Lepicystis*. Ex. *G. incanum*. *G. sepultum*. (Polypodium of authors. § 2. *Marginaria*. *Presl* in part.).—*** *Schellolepis*. Ex. *G. argutum*. *G. lachnopus*. *G. amœnum*. *G. verrucosum*. (see our TAB. XIV). (Polypodium *Don*, *Wall.*)—**** *Goniophlebia vera*. Ex. *G. attenuatum*. *G. loriceum*. *G. Catharinæ*. *G. menisciifolium*. (Polypodium of authors. *Goniophlebium*. *Presl*. *Marginaria*. § 2. *Marginaria*. *Presl.*")

Mr Smith seems to question what was the original *Marginaria* of Bory. This author himself expressly tells us, (*Nouv. Dict. des Sc. Nat. v. X. p. 176.*) that he is acquainted with six species, of which the two previously described were *Polypodium marginatum*, Bory in Willd., and *P. incanum*, Willd.

TAB. LI.—*Figs. 1, 3, 5.* Portions of the under-side of a fertile frond with sori; *f. 6.* Transverse section of a sorus; *f. 2, 4.* Portions of the upper-side of the same; *f. 7.* Sporangia, in different states; *f. 8.* Scales from the frond, and from the sori; *f. 9.* Sporules:—all more or less *magnified*.

THE HISTORY OF THE
CITY OF BOSTON
FROM THE FIRST SETTLEMENT
TO THE PRESENT TIME
IN TWO VOLUMES
BY NATHANIEL BENTLEY
OF THE BARR

THE FIRST VOLUME
CONTAINING THE HISTORY
FROM THE FIRST SETTLEMENT
TO THE YEAR 1780
IN TWO VOLUMES
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THE SECOND VOLUME
CONTAINING THE HISTORY
FROM THE YEAR 1780
TO THE PRESENT TIME
IN TWO VOLUMES
BY NATHANIEL BENTLEY
OF THE BARR





TAB. LII. A.

LEUCOSTEGIA. Presl.

Sori globosi, magni, infra marginales. *Indusium* orbiculari-reniforme, puncto laterali basilari affixum, planum, candide scariosum, impresso-punctulatum. *Receptaculum* punctiforme, minutum.—*Filix Nepalensis*. Rhizoma repens. Frondes sparsæ, herbacæ, pinnatim decompositæ, pagina superiore pallidiore faciem paginæ inferioris reliquarum Filicearum præseferente, inferiore intensius viridi nitidiore faciem superiorem referente, pinnis petiolatis, pinnulis sessilibus ovatis obtusis basi inæquilatera acutis, inferioribus inciso-pinnatifidis, superioribus laciniisque obtuse inæqualiter dentatis. Venæ pinnatæ internæ, venulisque apice clavato libero desinentes, infimæ furcatæ, venula superiori apice fructifera. Presl.

Leucostegia immersa. Presl. (TAB. LII.)—*Davallia immersa*. Wall.

Fig. 1. Under-side of a pinnule with sori ; f. 2. Upper side of do. ; f. 3. Portion of a pinnule with a sorus ; f. 4. Sorus, with the indusium forced open ; f. 5. Sporangia ; f. 6. Sporules :—magnified.

TAB. LII. B.

CYSTOPTERIS. Bernh.

Sori globosi, dorsi medio venularum insidentes. *Indusium* subhemisphæricum sæpe acuminatum, puncto sublaterali inferiore affixum, laxè cellulosum, nonnunquam serratum, demum reflexum et marcescens.—Filices pleræque extratropicæ. Frondes fasciculatæ, herbacæ, variegatim divisæ. Venæ inferiores pinnatæ, superiores simplices ; venulæ internæ ante marginem evanescentes.

Cystopteris fragilis. Bernh. (TAB. LII. B.) *Cystea*. Sm.

Fig. 1. Under-side of a pinnule with sori ; f. 2. Portion of a pinnule, with a single sorus ; f. 3. Sorus, with the indusium reflexed ; f. 4. Inner view of an involucre ; f. 5, 6. Sporangia ; f. 7. Sporules :—magnified.







TAB. LIII. A.

SAGENIA. *Presl.*

Sori globosi, aut dorsi medio venarum macularum mediarum aut apici venularum liberarum inserti. *Indusium* orbiculatum, peltatum.—*Filices tropicæ, inter majores. Frondes herbacæe pinnatim divisæ. Venæ internæ tenues, in maculas hexagonideas inæquales anastomosantes, maculis costalibus elongatis, superioribus sæpe ad angulum inferiorem internum venuliferis, venulis liberis apice soriferis.* Presl.

Sagenia hippocrepis. Presl. (TAB. LIII. A.) *Aspidium, Sw.*

Presl enumerates six species, as belonging to this Genus. *S. lobata, S. sorbifolia, S. varia, S. hippocrepis, S. latifolia, S. rufescens.*

Fig. 1. Small portion of the fertile frond of *Sagenia hippocrepis*, with sori, seen from beneath ; *f. 2.* Lesser portion with sori ; *f. 3.* Single sorus ; *f. 4.* Sporangia ; *f. 5.* Sporules :—*magnified.*

TAB. LIII. B.

FADYENIA.* *Nov. Gen.*

Sori orbiculares, uniseriales, apici venulæ superioris liberæ inserti. *Indusium* magnum, cordatum, basi profunde bilobum.—*Filix Jamaicensis. Frondes cæspitosæ simplices membranacæ costatæ difformes ; steriles lato-lanceolatæ, sessiles, apice longe attenuatæ, proliferæ : fertiles lineari-ligulatæ, obtusæ, basi in stipitem attenuatæ. Venæ pinnatæ ; venulæ superiores cum proximis oppositis maculas obliquas hexagonideas efficientes ; costales maximæ ; venula infima superior apice sorifera in fronde sterili nunc furcata.*

Fadyena prolifera, Hook. (TAB. LIII. B.) *Aspidium proliferum. Hook. et Grev. Ic. Fil. t. 96.*

HAB. Jamaica. *Dr M'Fadyen.*—I also possess specimens of the same plant, given by the late Mr Donn of Cambridge to Dr Lindley. The indusia are certainly cordate, fixed by the very deep sinus ; not orbicular and peltate as figured in *Icones Filicum.*

Fig. 1. Sterile frond, *nat. size* ; *f. 2.* Portion of the same, *magnified* ; *f. 3.* Fertile frond, *nat. size* ; *f. 4.* Portion of the same with sori ; *f. 5.* Single sorus ; *f. 6.* Sporangium ; *f. 7.* Sporules :—*magnified.*

* So named in compliment to Dr M'Fadyen, F.L.S. of Kingston, Jamaica, author of a Flora of Jamaica, to whom I am indebted for a very extensive collection of plants, including many Ferns, (this one among them,) and to whom I owe far greater obligations for his unremitting attentions to a beloved son, who fell a sacrifice to yellow fever, while under his hospitable roof.

THE HISTORY OF

THE

REIGN OF
HIS MOST EXCELLENT MAJESTY
CHARLES THE FIRST
BY
JAMES CLYDE

LONDON

Printed by J. Sturges, at the Golden-Anchor Press, in St. Dunstons Church-yard, near the North Church, in the Strand.

1720.

THE

SECOND EDITION

WITH
ADDITIONS
AND
CORRECTIONS
TO
THE
FIRST EDITION

BY
JAMES CLYDE

LONDON

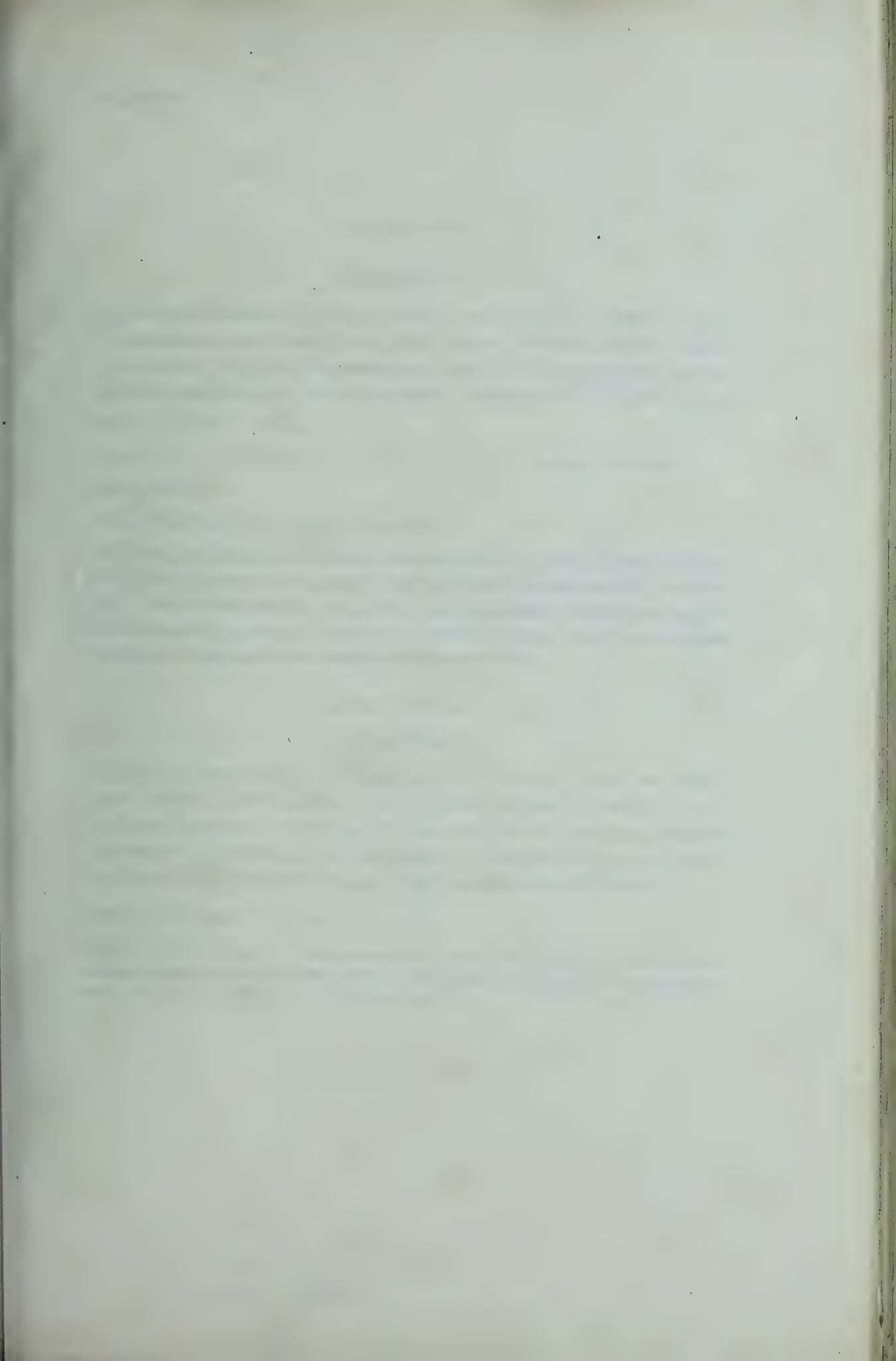
Printed by J. Sturges, at the Golden-Anchor Press, in St. Dunstons Church-yard, near the North Church, in the Strand.

1720.

THE









TAB. LIV. A.

DOODIA. *Br.*

Sori uni-biseriati lunulati v. lineares, seriati, costæ paralleli. *Indusium* e ramulo anastomosante venæ ortum, planum, intus liberum.—*Frondes* cæspitosæ, subcoriaceæ, pinnatæ, pinnis dentatis quandoque coadunatis. *Br.* Venulæ subtus elevata, parallelæ, simplices v. furcatæ, hic illic venulis anastomosantes: hæ venulæ soriferæ.

Doodia Kunthiana? Gaud.

(TAB. LIV.) *Fig.* 1. Pinna with sori; *f.* 2. Portion of do.; *f.* 3, 4, Sporangia :—*magnified.*

Doodia aspera. *Br.*

(TAB. LIV.) *Fig.* 5. Portion with sori :—*magnified.*

Mr Brown, the author of the Genus, observes that it is very near *Woodwardia* (see our TAB. XVII.), and that it has the same affinity with it that *Asplenium* has with *Allantodia*, (*Br.*). Presl remarks that it does not differ from *Woodwardia*, except in the veins and veinlets beneath being elevated, in having the sori rather distant from the costa, neither immersed nor linear, and in the indusium being flat and arched.

TAB. LIV. B.

BLECHNUM. *L.*

Sori venulis transversis venas conjungentibus inserti, lineares, contigui aut confluyendo continui, costæ paralleli et plus minus approximati. *Indusium* lineare, scariosum, margine libero costam respiciente.—*Frondes* cæspitosæ, plerumque coriaceæ, simplices pinnatifidæ vel varie pinnatæ. Venæ pinnatæ, venulæ simplices vel furcatæ, apice clavellatæ. Venulæ fructiferae transversæ, sæpe continuæ.

Blechnum occidentale. *L.* (TAB. LIV. B.).

Fig. 1, 2. Pinnæ with sori; *f.* 3. Portion of the same with the sporangia and part of the indusium removed, the rest of the indusium forced back; *f.* 4. Sporangium; *f.* 5. Sporules; *f.* 6. Portion of a sterile pinna, that the venation may be seen more distinctly.



B



TAB. LV. A.

HEMIDICTYUM. *Presl.*

ASPLENII. *L. et Hook. et Grev.* ALLANTODIÆ? *sp. Wall.*

Sori lineares, elongati, dorso venæ simplicis aut venulæ superioris venæ furcatæ inserti. *Indusium* lineare, elongatum, planum.—Species *Americæ intratropicæ*. Frondes *fasciculatæ herbaceæ*; in una *simplices, cordato-ovatæ, acuminatæ*; in altera *pinnatæ, amplæ, pinna opposita subinde magnitudine diversa*. Venæ *internæ, tenues, creberrimæ, pinnatæ, simplices aut furcatæ venulisque parallelæ, versus marginem ramosæ et in maculas trapezoidæas confluentes, ante marginem frondis in costulam margini frondis parallelam desinentes*. *Presl.*

Hemidictyum marginatum. (TAB. LV. A.) *Asplenium marginatum*, *L. A. Mikani, Presl.*

To this Genus *Presl* refers also the *Asplenium Douglasii*,^{*} *Hook. et Grev. Ic. Fil. t. 150*; (but this appears to me a congener with *Antigramma*), and doubtfully, the *Allantodia Brunonis*, *Wall.*

Fig. 1. Portion of a pinna of *Hemidictyum marginatum*; *f. 2.* Sorus; *f. 3.* Sporangium; *f. 4.* Sporules:—*magnified*.

TAB. LV. B.

DIPLAZIUM. *Presl.*

DIPLAZII. *Sw. et Auct. sp.*

Sori lineares, plus minus elongati, dorso venarum venularumve inserti, infimi superiores subinde et inferiores duplices l. bilaterales, superiores simplices (uti in *Asplenio*), aut omnes bilaterales. *Indusium* lineare planum, in soris bilateralibus bilaterale, margine libero sori unius (inferi) versus costam, alterius (superi) versus costulam directo, in soris simplicibus unilaterale, margine libero semper versus costulam directo.—Species *plerumque intratropicæ*. Frondes *fasciculatæ, herbaceæ aut coriaceæ, simplices et pinnatim divisæ*. Venæ *internæ, tenues, pinnatæ, simplices aut supra basin furcatæ, venulisque parallelæ ante marginem apice libero acuto desinentes*. *Presl.*

Diplazium plantagineum. *Sw.*

(TAB. LV. B.) *Fig. 1.* Portion of a frond with sori; *f. 2.* Sporangium:—*magnified*.

Diplazium striatum. *Presl.*

(TAB. LV. B.) *Fig. 3.* Pinnæ with sori.

Diplazium radicans. *Presl.* *Asplenium*. *Sw.*

(TAB. LV. B.) *Fig. 4.* Portion of the same:—*magnified*.

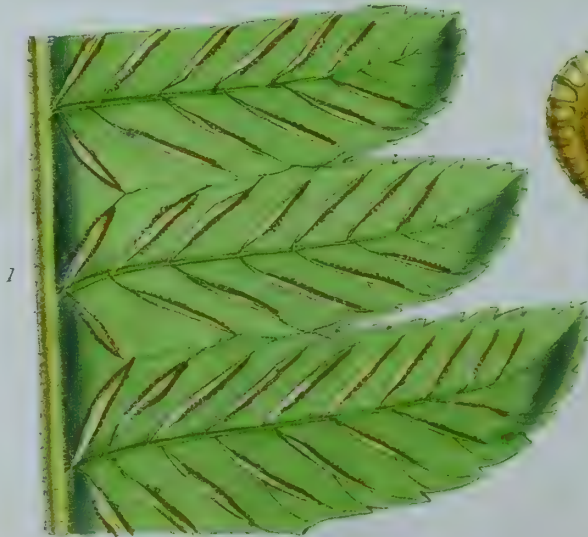
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B



C





TAB. LVI. A. B.

ANISOGONIUM. Presl.

DIPLAZII sp. Sw. et Auct. ASPLENII sp. Sw. et Auct.

Sori lineares, elongati, in venis infimis bilaterales seu duplices, in reliquis unilateralibus seu simplices. Indusium lineare, planum, in soris biserialibus margine uno libero versus costam altero versus costulam, in soris unilateralibus margine libero versus costulam directo.—Filices *intratropicæ*. Frondes *fasciculatæ, coriaceæ, aut herbaceæ, simplices aut sæpius pinnatim divisæ*. Venæ *internæ, tenues, pinnatæ, infimæ oppositæ in arcum acutum apice venuliferum connatæ, superiores ante marginem frondis apice obtuso terminatæ aut rarius præter supremas in arcus apice venuliferas connatæ*. Presl.

Anisogonium *decussatum*, Presl. Asplenium, Sw. Aspl. proliferum. Kaulf. Diplazium bulbiferum. Bojer, in *Herb. nostr.*—Sieb. *Syn. Fil. n.* 30.

(TAB. LVI. A. Fig. 1. Portion of a pinnule with sori; f. 2. Single sorus; f. 3. Sporangium; f. 4. Sporules :—magnified.)

Anisogonium *sylvaticum*. Presl. Diplazium. Sw. Asplenium. Presl.

(TAB. LVI. B. Fig. 1. Portion of a pinnule; f. 2. Sorus; f. 3. Sporangium; f. 4. Sporules :—magnified.)

Presl remarks of this Genus, “a Diplazio venarum arcubus distinctissimum;” but it will be perceived by the figure of our *A. sylvaticum*, Presl, that the lower opposite veinlets do not unite “in arcum acutum,” and I do not see how it is then to be distinguished from *Diplazium*.

TAB. LVI. C.

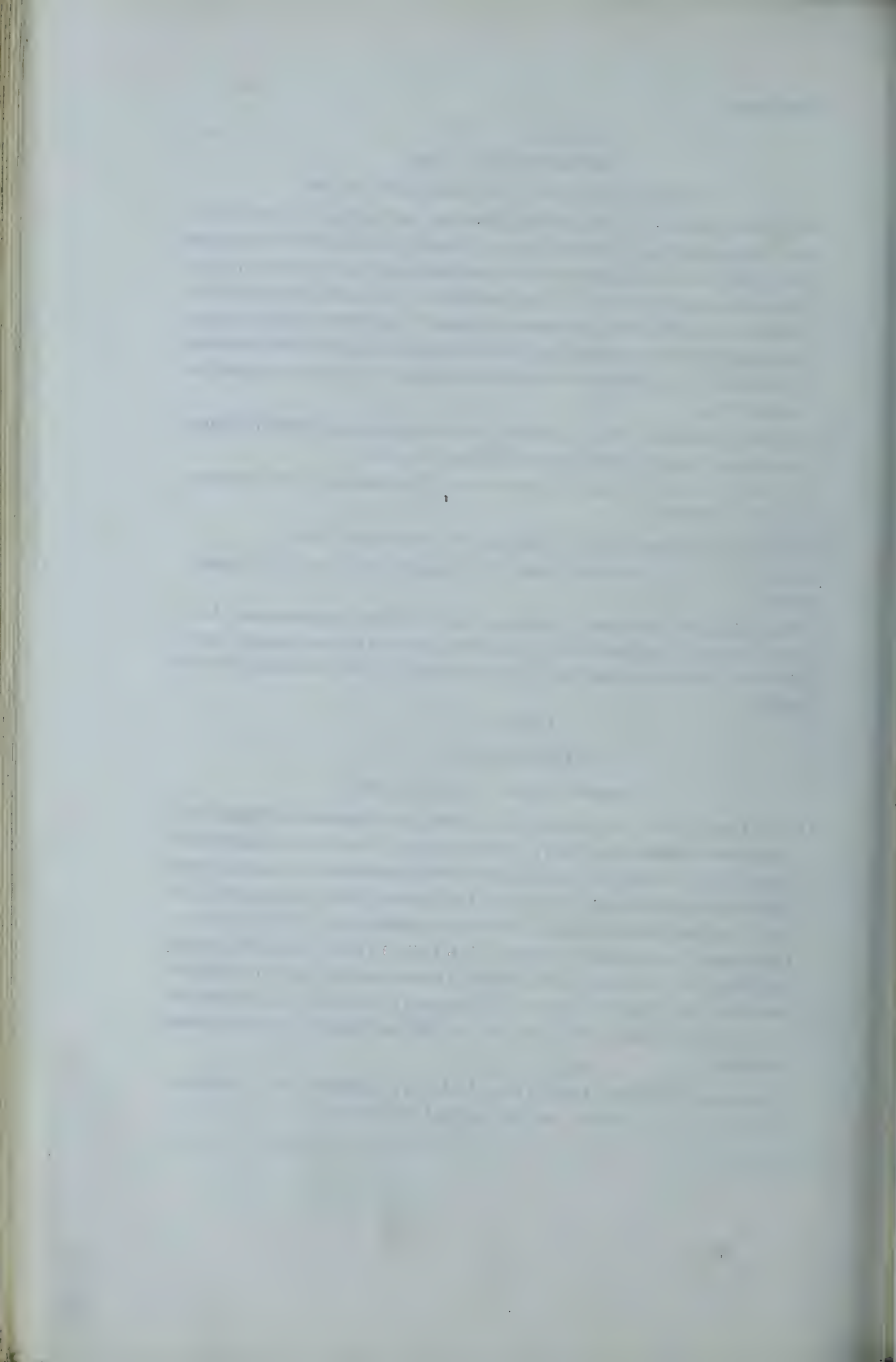
DIGRAMMARIA. Pr.

ASPLENII sp. Sw. DIPLAZII sp. Spr.

Of this Genus, Presl mentions only one species, the *Asplenium ambiguum*, Sw. (*Diplazium Malabaricum*, Spr.); and he remarks, “Genus adhuc insufficienter notum, cum sori mihi in statu valde imperfecto innotuerunt, ab omnibus tamen generibus Aspleniacearum et imprimis Diplaziearum venis infimis oppositis in arcum anastomosantibus angulis venuliferum distinguitur et Cnemidariam e Cyatheaceis in memoriam revocat.”—But though I have examined copious specimens from the East Indies of what I cannot doubt is the true *Asplenium ambiguum*, Sw., I find in every case the venation to be as here represented and as figured by Schkuhr, *Fil. t.* 75, and not different from that of *Anisogonium decussatum*.

Digrammaria *ambigua*. Presl. (TAB. LVI. C.) Asplenium, Sw. Diplazium Malabaricum, Spr.—Hook. et Arn. *Bot. of Beech. Voy. p.* 256.

Fig. 1. Portion of a pinna with sori; f. 2. Sorus; f. 3. Sporangium; f. 4. Sporules :—magnified.



A



B



C





TAB. LVII. A.

ANTIGRAMMA. *Pr.*

SCOLOPENDRII sp. *Presl, et Auct.*

Sori in venularum parte inferiori obvenientes, lineares, elongati, oppositi, inferior in venula superiori, superior in venula proxima inferiori. *Indusium* lineare, planum, marginibus liberis oppositis contiguis aut distantibus.—*Filices Brazilianæ*. Frondes *fasciculatæ, coriaceæ, simplices, integerrimæ*. Venæ *pinnatæ, crebræ, internæ, furcatæ, venulis parallelis a medio versus marginem frondis in maculas inæqualiter et elongate hexagonoideas anastomosantibus, maculis marginalibus angulis superioribus venulas breves emittentibus*. *Presl.*

Antigramma repanda, Presl. (TAB. LVII. A.) *Scolopendrium, Presl.* *Scol. ambiguum. Raddi.*

To this Genus *Presl* also refers *A. lancifolia, Pr. A. oblongata, Pr. A. plantaginea, Pr. A. populifolia, Pr.*; and to them we would add the *Hemidictyum Douglasii, Pr. (Asplenium. Hook. et Grev. t. 150.)*

Fig. 1. Portion of a frond with sori; *f. 2.* Portion of two sori; *f. 3.* Sporangium; *f. 4.* Sporules:—*magnified.*

TAB. LVII. B.

SCOLOPENDRIUM. *Sm.*

SCOLOPENDRII sp. *Presl. Spr.*

Sori lineares, oppositi, inferior in venula superiori, superior in venula proxima inferiori. *Indusium* lineare, planum, marginibus liberis, oppositis, contiguis aut distantibus.—Frondes *fasciculatæ, coriaceæ, aut sparsæ, herbaceæ, simplices, integerrimæ aut lobatæ*. Venæ *pinnatæ, crebræ, internæ, uni-bifurcatæ, venulis parallelis apice libero in punctum incrassato aut acuto terminatis*. *Presl.*

Scolopendrium officinarum. Sm.

The species are besides, *S. sagittatum, Sw. S. Hemionitis, Cav. S. longifolium, Pr. S. Durvillei, Bory.*

TAB. LVII. B.—*Fig. 1.* Portion of a frond with sori; *f. 2, 3.* Sporangia; *f. 4.* Sporules:—*magnified.*

TAB. LVII. C.

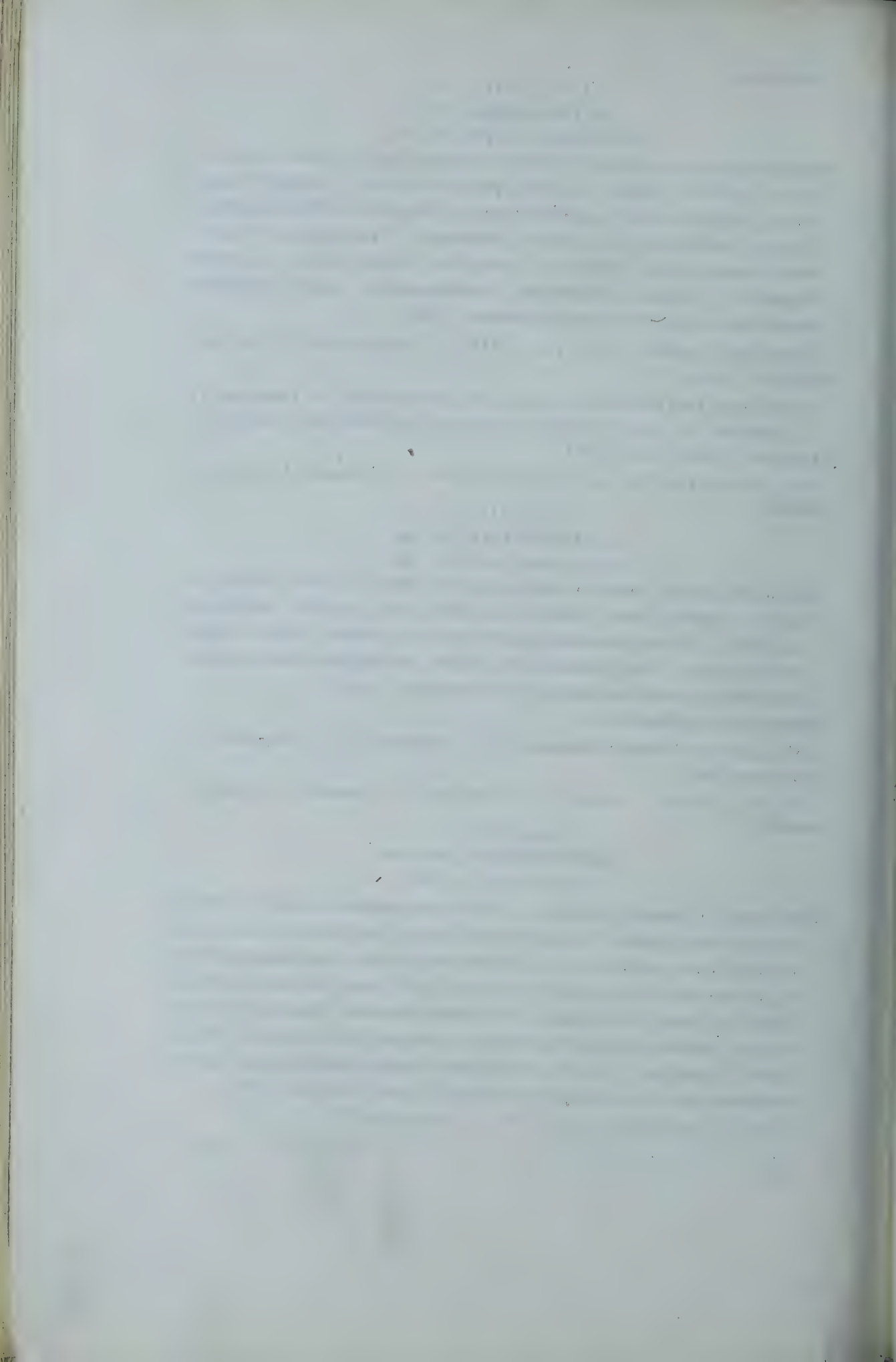
CAMPTOSORUS. *Link, Presl.*

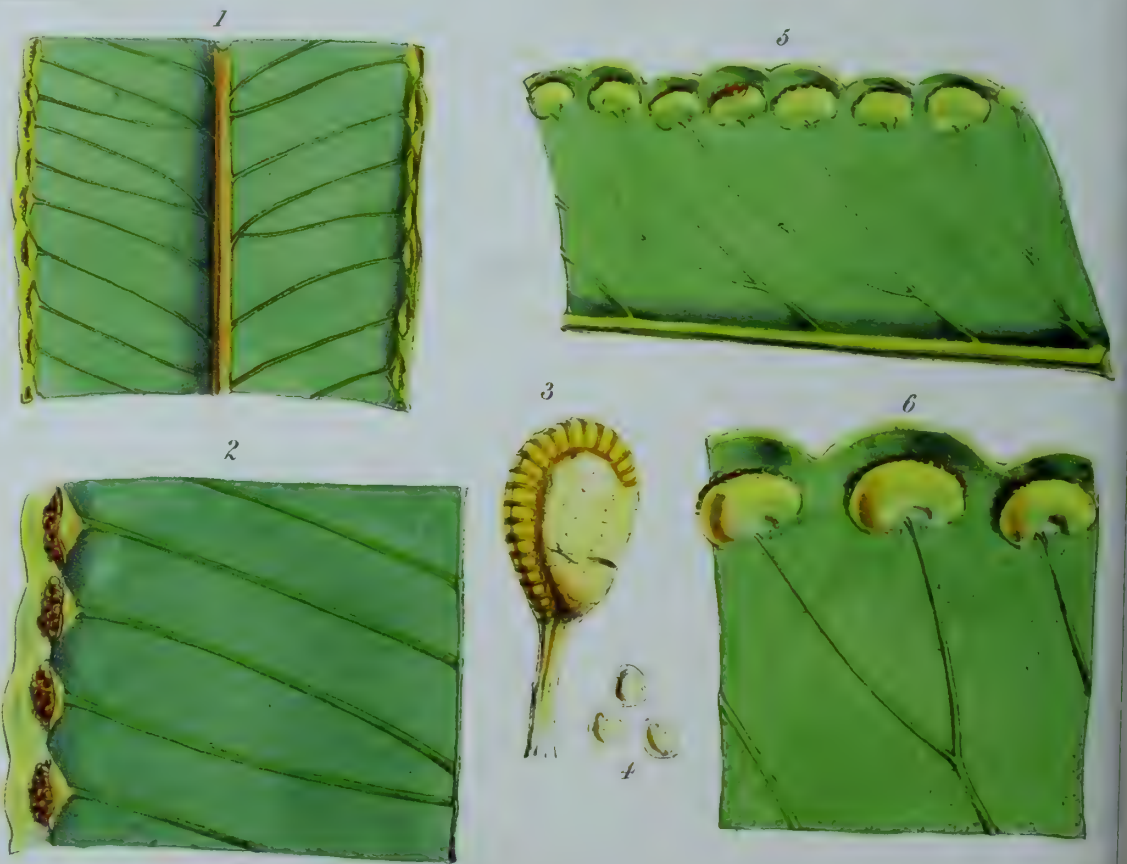
ASPLENII sp. *L. et Auct.*

Sori lineares, in maculis costalibus et in venis marginalibus solitarii, in maculis secundæ seriei oppositi. *Indusium* lineare, planum, margine in soris macularum costalium versus costam, in soris venularum marginalium versus marginem frondis, in soris inferioribus macularum secundæ seriei versus marginem, frondis in inferioribus versus costam libero.—*Filix boreali-Americana*. Frondes *fasciculatæ, coriaceæ, simplices, cordatæ, longe angustato-acuminatæ, apice radicanter*. Venæ *internæ, tenuissimæ, in maculas hexagonoideas biseriales anastomosantes, angulis macularum exteriorum venulas liberas simplices furcatasve emittentibus*. *Presl.*

Camptosorus rhizophyllus. (TAB. LVII. C.) Asplenium, L.

Fig. 1. Frond, nat. size; *f. 2.* Lower portion of do.; *f. 3, 4.* Sporangia; *f. 5.* Sporules:—*magnified.*





TAB. LVIII. A.

MICROLEPIA. *Presl.*

DAVALLIÆ *Sw. et Auct.*

Sori globosi, a margine frondis remoti. *Indusium* semiorbiculare, scariosum, margine superiore truncatum, demum solum dimidium tegens. *Receptaculum* globosum, respectu parvitat^{is} sori satis magnum.—*Filices intratropicæ*. Rhizoma *repens*. Frondes *herbaceæ*, *pinnatim supradecompositæ*, facie *Dicksoniæ* teneræ. Venæ *pinnatæ*, *utrinque prominulæ*, *venulisque ante marginem frondis apice clavato desinentes*, *infimæ pinnatim venulosæ*, *medio furcatæ*, superiores *simplices*, *venulis infimis superioribus soriferis*. *Presl.*

Microlepia inæqualis. *Presl.* (TAB. LVIII. A.) *Davallia*. *Kunze.*

Fig. 1. Upper side of a fertile pinnule; *f. 2.* Under side of two pinnules; *f. 3.* Sorus; *f. 4.* Sporangium; *f. 5.* Sporules:—*magnified.*

Microlepia polypodioides. *Presl.* *Dicksonia*. *Sw.*

TAB. LVIII. A. *Fig. 6.* Under-side of a fertile pinnule:—*magnified.*

TAB. LVIII. B.

SACCOLOMA. *Kaulf. Presl.*

DAVALLIÆ sp. *Sw. et Auct.* DICKSONIÆ sp. *Bory.* ASPIDIUM sp. *Blume.*

Sori in apice omnium venularum aut superiorum (e furcatura), subglobosi, parvi, dorsum dentium occupantes, inframarginales. *Indusium* semiorbiculare, herbaceum, demum scariosum, margine superiore late rotundatum. *Receptaculum* punctiforme minimum.—Species *intratropicæ*. Frondes *sparsæ v. fasciculatæ*, *herbaceæ*, *teneræ*, *simpliciter pinnatæ*, *pinnis subinde dimidiatis*. Venæ *pinnatæ*, *crebræ*, *internæ*, *tenues*, *parallelæ*, *simplices aut in diversa altitudine furcatæ venulisque ante marginem apice acuto desinente*. *Presl.*

Saccoloma elegans. *Kaulf.*

(TAB. LVIII. B.) *Fig. 1.* Under-side of a portion of a fertile pinna; *f. 2.* Smaller portion of the same; *f. 3.* Sporangium; *f. 4.* Sporules:—*magnified.*

Saccoloma Imrayana. *Hook. in Ic. Pl. ined.*

(TAB. LVIII. B.) *Fig. 5.* Portion of a fertile pinna seen from beneath; *f. 6.* Larger portion of the same:—*magnified.*

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TAB. LIX. A.

KAULFUSSIA. *Blume.*

Sori exserti, orbiculares, concavo-hemispherici, coriaceo-carnosi, crenati, e sporangiis 10—20 intus dehiscentibus in orbem concreti, in confluentia venularum tertiariarum et ultimarum siti. *Sporulæ* ovales, pellucidæ, minutissimæ.—*Filices Indiæ Orientalis.* Frondes *ternatæ, amplæ, stipitatæ, subcarnosæ*; foliola *oblongo-ovalia, acuta, nunc lateralìa, bipartita, subtus pallidiora, (stomatibus?) seu punctis excavatis nunc compositis instructa.* Venæ *pinnatæ*; “*secundariæ apices versus arcuatæ et ope venularum mutuo nexæ, vel magis distinctæ, apice utriusque cum vena secundaria superiore confluyente; tertiariæ vix prominulæ; interveniæ cæterum varie irregulariterque reticulatæ; terminatio venularum ultimarum obscure clavata vel intra-marginalis, vel intra areolas.*” (*Griff.*)

Kaulfussia Assamica. *Griff. Descr. of Kaulf. p. 108. tab. 19. (TAB. LIX. A.)*

Fig. 1. Portion of the under-side of a fertile frond; *f. 2.* Smaller portion with a compound stoma or cavity on the under-side of the frond; *f. 3.* Upper; and *f. 4.* Under surface of a sorus; *f. 5.* Sporules:—*magnified.*

Kaulfussia æsculifolia. *Blum. in Hook. et Grev. Ic. Fil. tab. 229. (TAB. LIX. A.)*

Fig. 6. Portion of the under-side of a fertile frond; *f. 7.* Sorus:—*magnified.*

Ophioglosseæ.

TAB. LIX. B.

OPHIOGLOSSUM. *L.*

OPHIODERMA. *Blume in Endl. Gen. Plant. p. 66.*

Sporangia sessilia, globosa, coriaceo-carnosa, opaca, transversim dehiscentia, in spicam disticham indivisam connata. *Sporulæ* globoso-triangulares, pellucidæ, minutissimæ.—*Filices in toto orbe terrarum obviæ, terrestres vel epiphytæ.* Frons *simplex ovata, lanceolata, palmata v. lineari-furcata, coriaceo-membranacea, subcarnosa, vix costata, reticulatim venosa, areolis elongatis subhexagonoideis; nunc stipitata; fronde vel stipite spicam pedunculatam gerente.*

Ophioglossum vulgatum. *L.—(TAB. LIX. B.)*

Blume and Endlicher are inclined to separate *O. pendulum*, *L. (Hook. et Grev. Ic. Fil. t. 19.)* on account of the presence of an incomplete septum in the sporangia, and the different habit; but the first of these two characters is very obscure; the second is rendered invalid by the intermediate nature of *O. palmatum*, (*Hook. Ic. Pl. v. I. t. 4.*)

Fig. 1. Frond and spike: *nat. size*; *f. 2.* Portion of the frond; *f. 3.* Portion of a spike; *f. 4.* Sporangium; *f. 5.* Sporules:—*magnified.*

A



B





Polypodiaceæ.

TAB. LX. A.

CULCITA. *Presl.*

Sori globosi, magni. *Indusium* coriaceum, utrumque fornicato-semilunatum, patens. *Receptaculum* transversum, lineare, cristæforme.—*Filix Maderensis*. Frons coriacea, pinnato-decomposita. Venæ pinnatæ, subtus elevatæ, simplices furcatæve, simplices apice fructiferæ.—A *Balanio* genus hoc differt indusio utroque conformi semilunato, receptaculo transverso lineari et cristæformi, sorisque magnis. *Presl.*

Culcita macrocarpa. (TAB. LX. A.) *Dicksonia Culcita*. *L'Hérit.* *Balanium*. *Kaulf.*

Fig. 1. Portion with barren and fertile segments, seen from beneath ; *f. 2.* Fertile portion ; *f. 3.* Sorus ; *f. 4.* Sporangium ; *f. 5.* Sporules ; *f. 6.* Hair from among the sporangia :—*magnified.*

TAB. LX. B.

LEPTOPLEURIA. *Presl.*

Sori in venulis superioribus marginales, globosi. *Indusium* verum coriaceum, semilunare, concavum, demum patens, accessorium e dente frondis excreto efformatum conforme. *Receptaculum* punctiforme, minimum.—*Filix ex insula Borboniæ*. Frondes coriaceæ, pinnatæ, pinnis sessilibus, oblongis, oblique subcordatis obtusis, crenulatis. Venæ pinnatæ, creberrimæ, internæ, tenuissimæ, uni-bifurcatæ, venulis parallelis, sub margine frondis apice punctiformi magno terminatis. *Presl.*

Leptopleuria abrupta. (TAB. LX. B.) *Dicksonia Bory.*

Fig. 1. Pinna, with sori ; *f. 2.* Portion of the same ; *f. 3.* Sorus ; *f. 4.* Sporangium ; *f. 5.* Sporules :—*magnified.*

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A



B



TAB. LXI. A.

DICKSONIA. *L'Hérit.*DENNSTAEDTIA. *Bernh.*

Sori globosi, parvi. *Indusium* scariosum, valvulis dissimilibus demum patentibus, verum semilunare, accessorium e dente frondis reflexo efformatum, operculiforme. *Receptaculum* punctiforme, minimum. *Sporangia* longe pedicellata.—*Filices pleræque intratropicæ*. *Rhizoma repens*. *Fronde*s *sparsæ, herbacæ, pinnato-decompositæ et supradecompositæ, tenues, plerumque amplæ*. *Venæ pinnatæ, tenues, pinnatim ramosæ, venulisque subtus prominulæ, infima superiore subinde et inferiore apice sorifera supra puncto impresso sorum indicante insignita*.—*Pr.*

Dicksonia tenera, *Presl.*—(TAB. LXI. A.)—*D. adiantoides*. *Link.*

I have chosen the *Dicksonia tenera*, (*Pr.*) as illustrative of *Presl's* ideas of this Genus, because I consider the specimen in my Herbarium (from the Berlin collection,) authority for that plant. But I cannot see that the indusium is so decidedly and unequally 2-valved as *Presl's* character and figure express it to be. It appears, indeed, to be formed of a dilated (at length membranaceous,) portion or tooth of the frond, which unites with a scale arising from the apex of a nerve on the underside of the pinnule: at first they form a nearly globose entire indusium, which soon bursts at the top, sometimes with a transverse cleft, and then the indusium seems 2-valved; sometimes with an irregular circular opening, and then the indusium appears pateræform, and in no way different from the following genus, *Patania*. I may observe, in specimens in my Herbarium of *D. Martiana*, (*Kl.*), and of what I take to be *D. dissecta* and *D. adiantoides*, the indusium is more constantly 2-valved than in the present species, and scarcely differs from that of *Culcita* (see TAB. LX.) but in being of a more membranaceous texture. The name of *Dicksonia* surely, however, ought to be preserved to the original *D. arborescens* (*Balantium*, *Kaulf.*, TAB. nostr. XX.) The species included in *Dicksonia* of *Presl*, are *D. pubescens*, (*Schk.*), *D. apiifolia*, (*Sw.*), *D. tenera*, (*Pr.*), *D. adiantoides*, (*Humb.*), *D. angustidens*, (*Pr.*), *D. cicutaria*, (*Sw.*)

Fig. 1. Under, and *f. 2.* Upper portion of fertile frond of *D. tenera*, (*Pr.*); *f. 3.* Sorus; *f. 4.* Sporangium; *f. 5.* Sporules:—*magnified*.

TAB. LXI. B.

PATANIA. *Presl.*

DICKSONIÆ sp. *Willd. Kunze.* DAVALLIÆ sp. *Presl.*

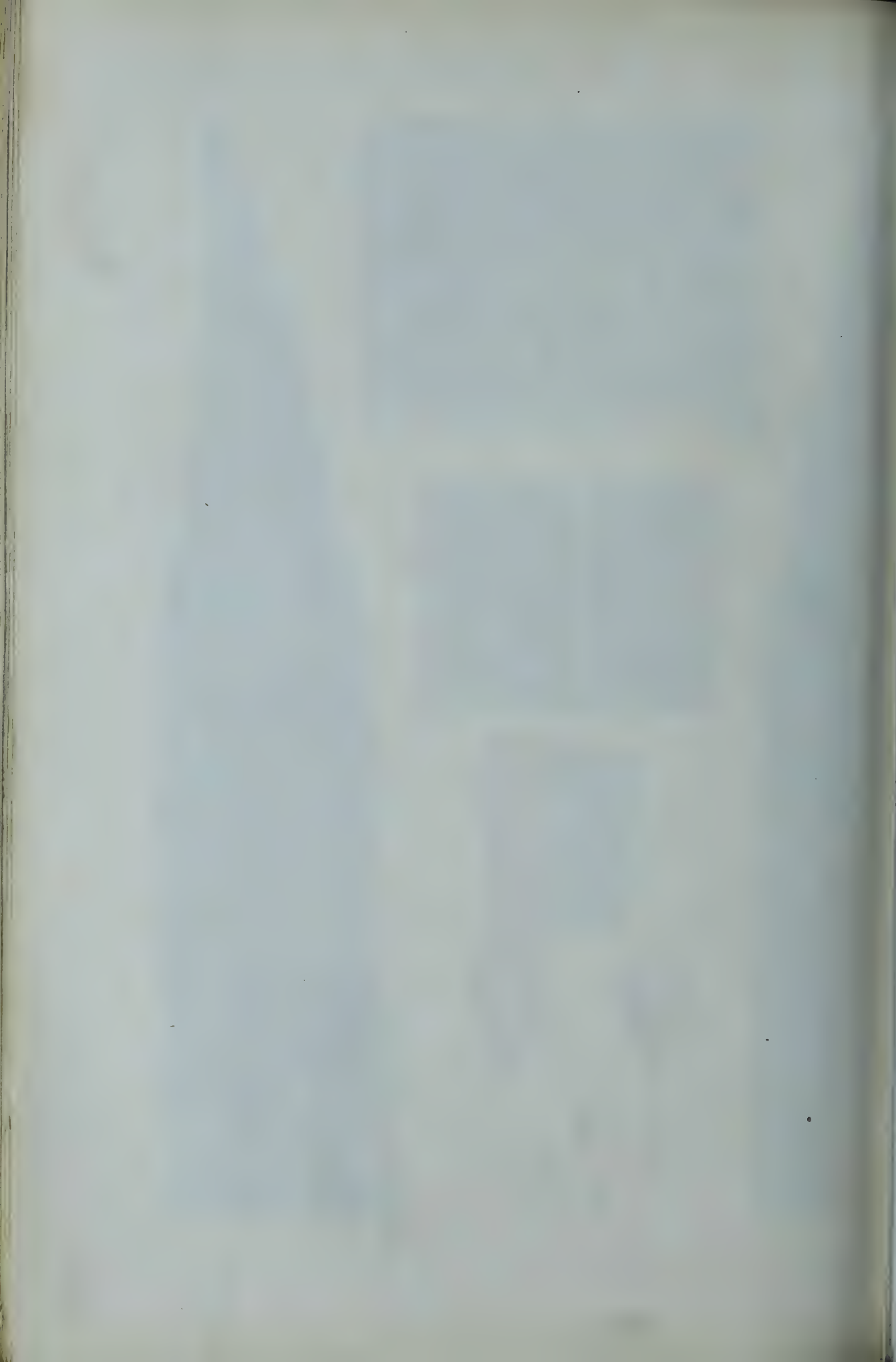
Sori globosi, submarginales. *Indusium* tenuiter coriaceum, pateræforme, integerrimum, basin tantum sori involucrans, persistens, parte superiori e dente frondis alterato constituta. *Receptaculum* tuberculiforme, globosum, minutum. *Sporangia* longe pedicellata.—*Rhizoma repens*. *Fronde*s *sparsæ, coriacæ, pinnatim compositæ et supradecompositæ, amplæ*. *Venæ pinnatæ, tenues, subtus parum prominulæ, furcatæ, inferiores bi-trifurcatæ, venulis sterilibus apice libero acutis, infimis superioribus apice punctiformi-incrassato soriferis*.—*Pr.*

Patania erosa, *Math. Herb. Peruv. n. 974.*—(TAB. LXI. B.)

To this Genus the author assigns only three species, natives of Peru, *P. obtusifolia*, (*Dicksonia*, *Willd.*), *P. erosa*, (*Dicksonia*, *Kze.*), and *P. concinna*, (*Pr.*), but to which I think several of *Presl's* *Dicksoniæ* may without violence be referred, since their only character lies in the entire (not 2-valved,) and pateræform indusium.

Fig. 1. Under portion of fertile pinnule; *f. 2.* Indusium; *f. 3.* Portion and receptacle with sporangia; *f. 4.* Sporangium; *f. 5.* Sporules:—*magnified*.





TAB. LXII.

DICTYOXIPHIIUM. *Hook.*

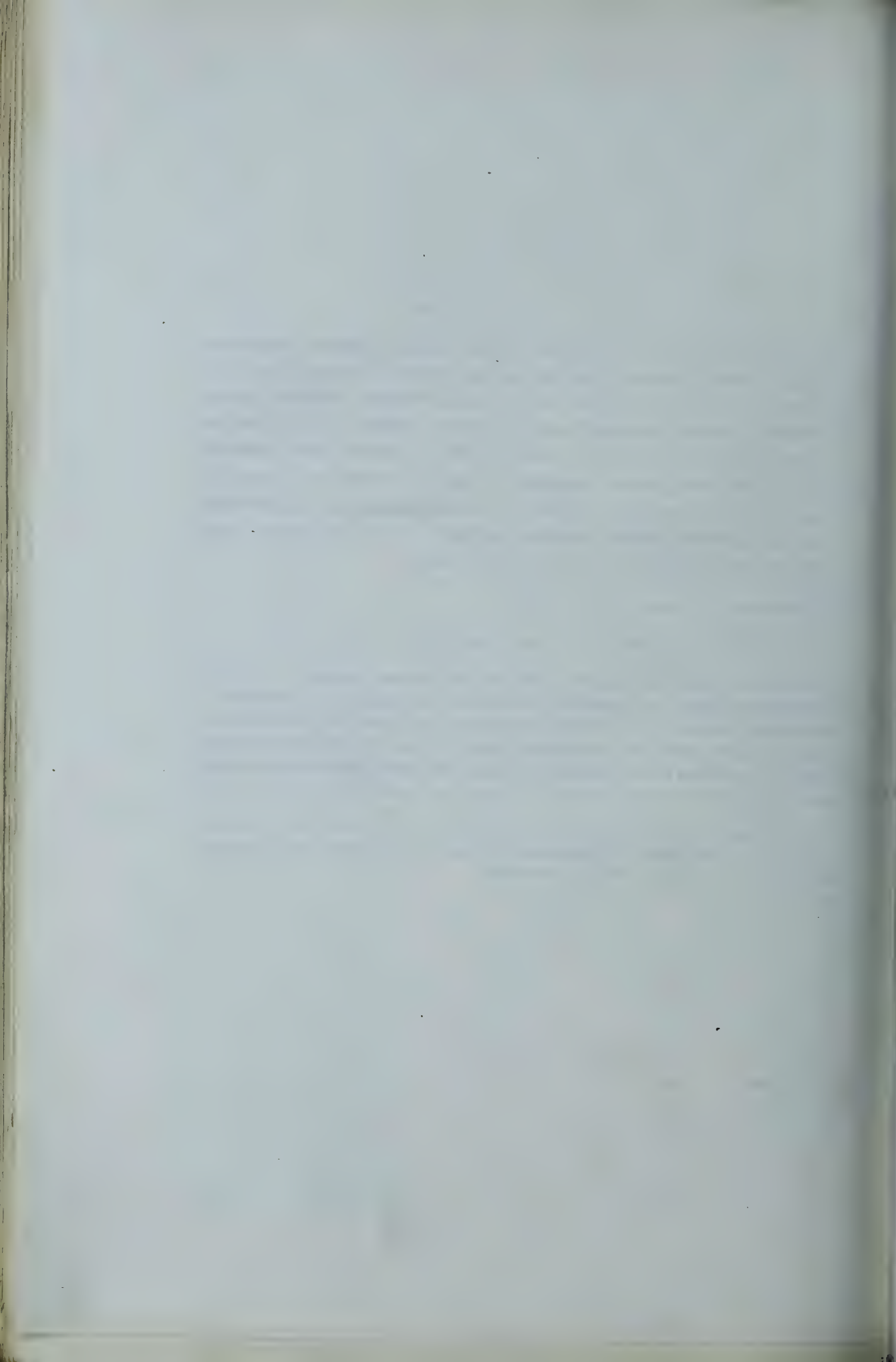
Sorus inframarginalis, linearis, continuus. *Indusium* lineare, elongatum, continuum, margini frondis parallelum, margine superiore liberum. *Sporangia* longe pedicellata. *Sporulæ* ovales, rugosæ.—*Filix tropico-Americana*. *Rhizoma simplex, crassum*. Frondes *cæspitosæ, simplices, elongatæ, ensiformes, coriaceo-membranaceæ* (*fertiles plerumque multo angustiores*) *basi in stipitem brevem attenuatæ, costatæ, costa valida utrinque prominente*. *Venæ internæ, transversæ, subapproximatæ, flexuosæ, ramosissimæ*. *Venulæ in maculas hexagonideas inæquales anastomosantes, maculas minores ramuliferas continentes*. *Ramuli (seu venulæ secundariæ) simplices furcatæve divaricatæ, apicibus clavatis*.

Dictyoxiphium Panamense.—(TAB. LXII.).

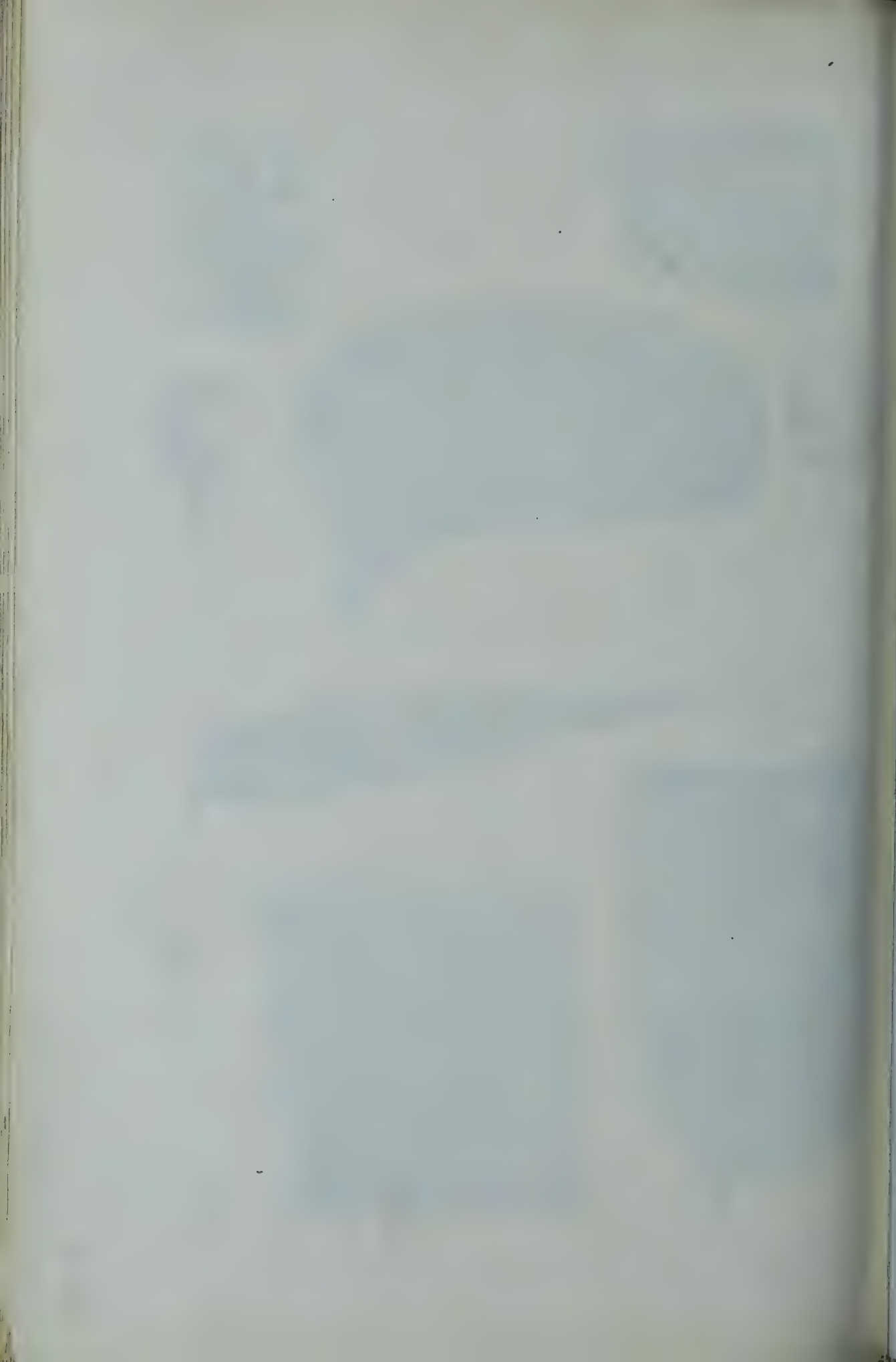
HAB. Isthmus of Panama, on the coast of the Pacific. *Cuming, n. 1124.*

This is quite a new Fern, and very unlike any that I can find described. The fronds are simple, in general form resembling a very broad *Vittaria*, in the fructification a *Saccoloma* or *Lindsæa*, in the venation an *Amphiblestra* (Pr.) among the *Adiantum* group, or a *Gymnopteris* among the *Acrostichum* group. I have only received it from Mr Cuming. The fronds are 2-3 feet long; the sterile ones much broader than the fertile ones; but the sterile ones (as shown at *fig. 1.*) sometimes become fertile towards the apex.

Fig. 1. Portion of a sterile frond partially bearing fructification; *f. 2.* Smaller portion of the same; *f. 3.* Portion of a fertile frond; *f. 4.* Smaller portion of same, seen from beneath; *f. 5.* Portion of a sorus; *f. 6, 7.* Sporangia; *f. 8.* Sporules :—*magnified*.







TAB. LXIII. A.

LINDSÆA. *Dryand.*

Sorus inframarginalis, linearis, continuus. *Indusium* lineare, continuum, margini frondis parallelum, margine superiore libero.—*Filices præcipue tropicæ*. *Rhizoma repens*. *Fronde*s *sparsæ*, *coriaceæ* v. *herbaceæ*, *simplices* aut *pinnatim compositæ*. *Venæ crebræ*, *internæ*, *flabellatæ*, *uni-bi-tri-quadri-furcatæ*, *tenuissimæ*.—*Pr.*

Lindsæa trapeziformis, *Dr.*—(TAB. LXIII. A.)

The species of this well-marked Genus are numerous. Presl enumerates thirty-three species.

Fig. 1. Portion of a frond, *nat. size*; *f. 2.* Pinna; *f. 3.* Portion of do.; *f. 4, 5.* Sporangia; *f. 6.* Sporules:—*magnified*.

TAB. LXIII. B.

SCHIZOLOMA. *Gaudich.*

LINDSÆÆ sp. *Auct.* PTERIDIS sp. *Alior.*

Sorus inframarginalis, linearis, continuus. *Indusium* lineare, continuum, margini frondis parallelum, margine superiore libero.—*Filices intratropicæ*. *Rhizoma repens*. *Fronde*s *sparsæ*, *tenuiter coriaceæ*, *simplices* aut *pinnatæ*. *Venæ internæ*, *tenuissimæ*, *ramosissimæ*, *in maculas hexagonoideas anastomosantes*.—*Pr.*

S. macrophyllum, *Pr.*—(TAB. LXIII. B.)—*Lindsæa*, *Kaulf.*

Other species of the Genus are *S. cordatum*, (*Gaudich.*) *S. ? lanceolatum*, (*Pr.*) *S. Billardieri*, (*Gaudich.*,) and *S. Guerinianum*, (*Gaudich.*,) (*Lindsæa*, *Desv.*)

Fig. 1. Pinna of *S. macrophyllum*, *nat. size*; *f. 2.* Portion of the same; *f. 3.* Smaller portion of the same; *f. 4.* Sporangium; *f. 5.* Sporules:—*magnified*.

A



B





TAB. LXIV. A.

PTERIS. Presl.

PTERIDIS sp. Auct. PTERIDIS Sect. CALOPHYLLOPTERIDEÆ. Gaudich.

Sorus marginalis, linearis, continuus. *Indusium* marginarium, scariosum, interius dehiscens.—Filices *plerumque intratropicæ*. Rhizoma *subglobosum*. Frondes *fasciculatæ, coriaceæ aut herbaceæ, lobatæ, sæpissime pinnatim divisæ*. Venæ *pinnatæ, crebræ, simplices, sæpius uni-bifurcatæ, tenues, venulisque apice obtuso libero terminatæ, internæ aut elavatiusculæ, venulis parallelis rarissime divergentibus*.—Pr.

Pteris nemoralis. Willd.—Pr.—Ag.—(TAB. LXIV. A.)

Our specimen is from Lappas Island, near Macao, gathered by the Rev. G. H. Vachell. The species of this Genus, even as restricted by Presl, are numerous and mostly tropical. Presl well observes that they scarcely differ from *Lomaria*, except in the broad and leafy pinnæ, pinnules, and segments, in the sori being remote from the costa, and more slender; in the narrower indusium and the fertile fronds not being different from the sterile ones. In our *Pt. nemoralis*, and in the example we have selected to illustrate *Lomaria* (TAB. LXIV. B.), the indusium seems rather to be a little intramarginal than to be formed by the revolute margin of the frond itself. And this appearance has not escaped the notice of Presl, who attributes it to a plica formed in drying.

TAB. LXIV. A. Fig. 1. Portion of the upper side of a fertile frond: *nat. size*; f. 2. Smaller portion of do. seen from beneath; f. 3. Portion of the sorus; f. 4, 5, Sporangia; f. 6. Sporules:—*magnified*.

TAB. LXIV. B.

LOMARIA. Willd.

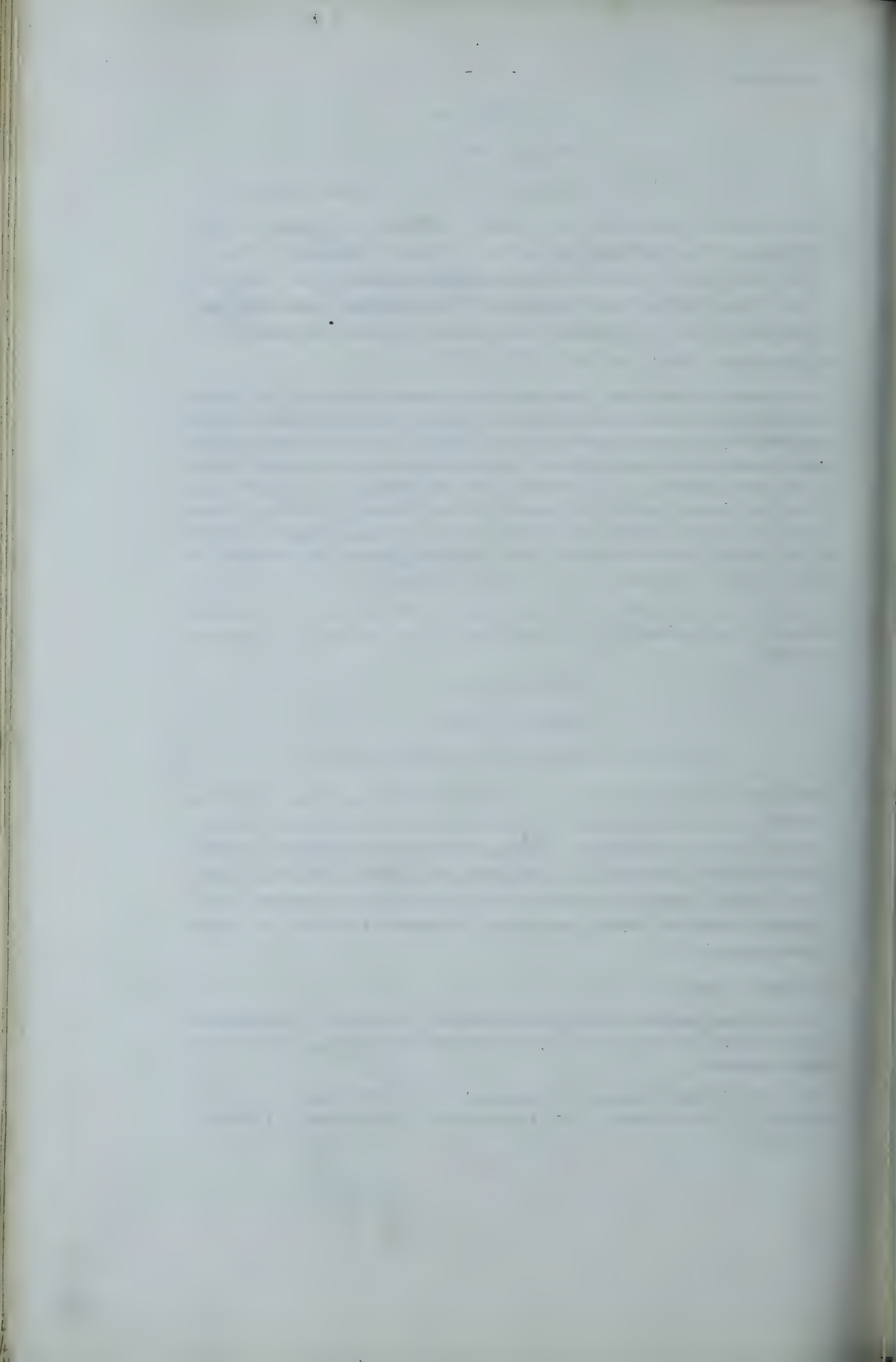
ONOCLEA L. STEGANIA. Br. BLECHNI sp. Auct.

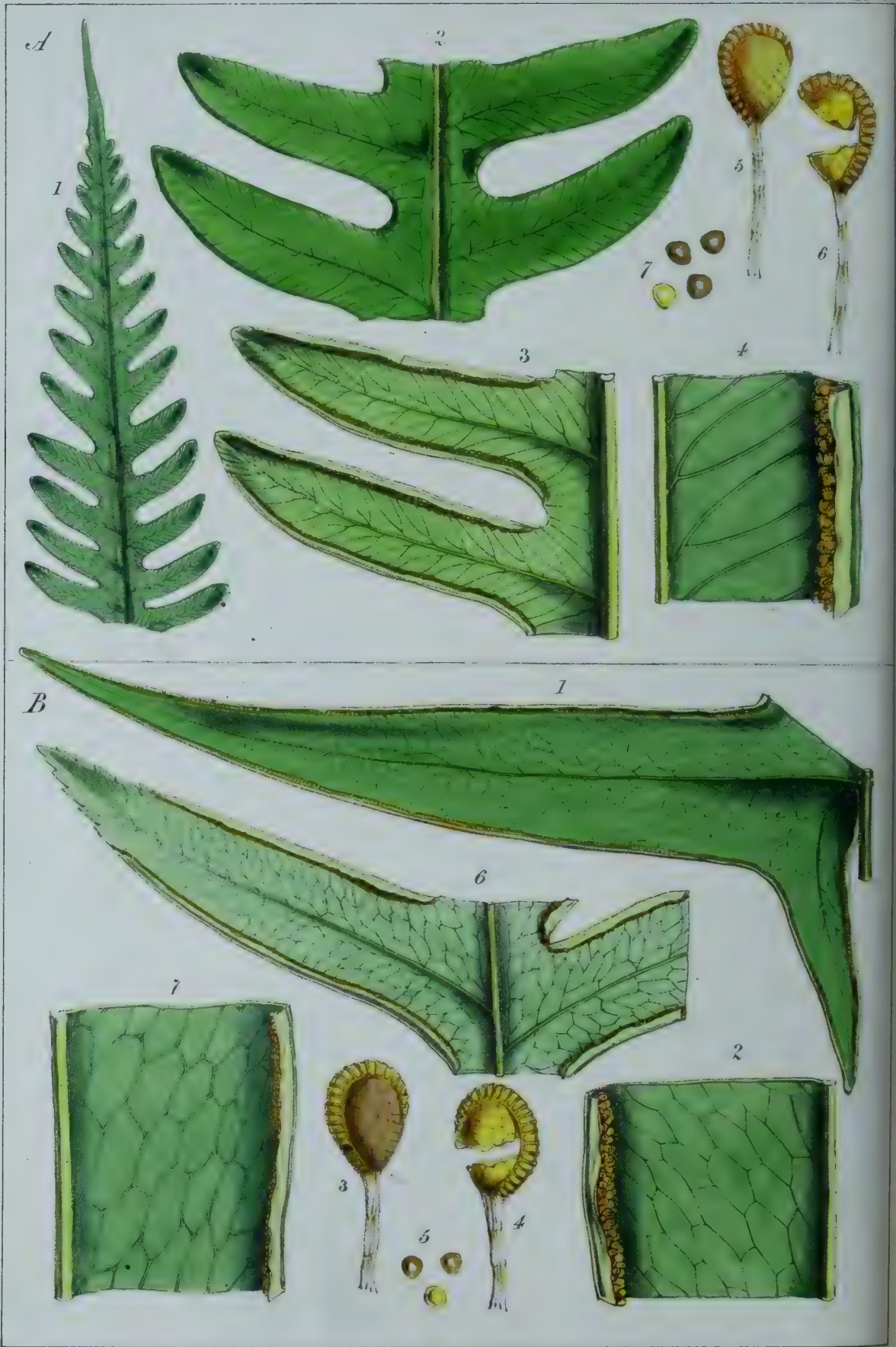
Sorus marginalis, linearis, continuus. *Indusium* marginarium, lineare, scariosum, continuum, aut crenis dentibusve frondis interruptum versus costam dehiscens.—Filices *tropicæ et extratropicæ*. Rhizoma *subglobosum aut obliquum, rarissime caudex arboreus quadripedalis*. Frondes *fasciculatæ, herbaceæ aut coriaceæ, diffformes, simplices, pinnatifidæ, pinnatæ bipinnatæque, fructiferæ angustiores*. Venæ *pinnatæ, creberrimæ, internæ, uni-bifurcatæ, tenuissimæ, horizontales aut angulo obtuso exorientes*.—Pr.

L. Chilensis, Kaulf.—(TAB. LXIV. B.)

Our plant was gathered in Chili by Mr Cruckshanks. The species of the Genus are numerous; Presl and other authors refer to it the *Onoclea Spicant*, L., which I rather place in *Blechnum*.

TAB. LXIV. B. Fig. 1. Under-side of a sterile, and f. 2. of a fertile pinna: *nat. size*; f. 3. Portion of f. 1. to show the venation; f. 4, 5. Portions with sori; f. 6. Sporangium; f. 7. Sporules:—*magnified*.







TAB. LXV. A.

CAMPTERIA. Presl.

PTERIDIS sp. Auct.

Sorus marginalis, linearis, continuus. *Indusium* marginarium, lineare, scariosum, continuum, interius dehiscens.—*Filices pleræque Indicæ*. *Habitus Pteridis* (*præcipue* Pt. nemoralis). *Rhizoma subglobosum*. *Fronde fasciculatæ, herbacæ, pinnatæ, pinnis pinnatifidis, infimis ut plurimum partitis*. *Venæ pinnatæ, internæ, tenues, infimæ oppositæ in arcum angulatum obtusissimum venulas in sinum laciniarum frondis directas emittentem anastomosantes, reliquæ furcatæ, venulis parallelis apice clavulato libero terminatis*.—Presl.

C. biauriata.—(TAB. LXV. A.)—*Pteris biauriata*. L. (*fide* Herb. Linn.)—Agardh, non Sw.—nec Presl.—*Campteria Röttleriana*. Presl?—*Pteris nemoralis*. Blume, Willd. Herb. n. 19997. (Agardh.)

A genus of only six species, according to Presl, readily distinguished by the lower veinlets uniting and forming an arch at the sinus.

Fig. 1. Portion of a pinna, nat. size; f. 2. Upper, and f. 3, Under side of a fertile portion; f. 4. Sorus; f. 5, 6. Sporangia; f. 7. Sporules :—magnified.

TAB. LXV. B.

LITOBROCHIA. Presl.

PTERIDIS sp. Auct.

Sorus marginalis, linearis, continuus. *Indusium* marginarium, lineare, angustum, scariosum, interius dehiscens.—*Filices pleræque tropicæ*. *Rhizoma globosum, rarius caudex arboreus, pluripedalis, erectus*. *Fronde fasciculatæ, coriacæ et herbacæ, simplices, lobatæ, pinnatæ usque pinnato-decompositæ*. *Venæ internæ, tenues, in maculas hexagonoideas, elongatas vel breves anastomosantes, maculis externis venulas apice libero obtuso terminatas emittentibus*.—Presl.

L. hastata. Pr.—(TAB. LXV. B. f. 1—5.)—*Pteris*. Rad.

L. Endlicheriana. (TAB. LXV. B. f. 6.)—*Pteris*. Agardh, Gen. Pterid. p. 66.

Here the copious hexagonoid reticulations are quite different from every other of the *Pteris* group, and resemble those of *Sagenia* in the *Aspidium* group. The species are very numerous, and many of them with fronds so coriaceous and opaque that the venation is hardly discernible but by maceration.

Fig. 1. Portion of a fertile frond of *L. hastata*: nat. size; f. 2. Smaller portion of do.; f. 3, 4. Sporangia; f. 5. Sporules :—magnified; f. 6. Portion of a fertile pinna of *L. Endlicheriana*, Ag.: nat. size; f. 7. Smaller portion of the same :—magnified.

A



B



TAB. LXVI. A.

CASSEBEERA. Kaulf.

ADIANTI sp. Sm. et Auct. CHEILANTHIS sp. Sm.

Sori marginales, duo sub qualibet crena emarginata frondis, subglobosi. *Indusium* marginarium, subrotundum, aut lineari-oblongum, solum geminum obtegens, scariosum.—*Filices hemispheriæ australis*. *Rhizoma repens*. *Fronde sparsæ, coriaceæ, trifoliato-pinnatæ, pinnatæ aut bipinnatæ*. *Venæ pinnatæ, creberrimæ, internæ, tenuissimæ, pluries furcatæ, venulis parallelis*. *Stipes cortice vitreo nigro-fusco nitido obductus, fragilis*.—Presl.

C. triphylla. Kaulf.—(TAB. LXVI. A.)—*Adiantum triphyllum*. Sm.

A genus, according to Presl, of three species, one a native of the Cape of Good Hope, *C. pteroides*, (*Cheilanthes*, Sw.) one of Brazil, *C. pinnata*, and our present species from Buenos Ayres. It is not easy in the advanced state of the fructification of our plant to see the geminate nature of the sorus. The indusium has its origin at some little distance from the margin, and is notched or two-lobed.

Fig. 1. Fertile frond seen from above, magnified; f. 2. Terminal, and f. 4. lateral pinna of the same, seen from beneath; f. 3. Sorus; f. 5. Sporangia; f. 6. Sporules:—magnified.

TAB. LXVI. B.

ADIANTUM. Linn.

Sori marginales aut lineares, continui aut breviter lineares contigui aut globosi, distincti. *Indusium* marginarium aut lineare, continuum, aut breviter lineare, aut semilunatum, interius dehiscens in inferiori pagina capsuliferum. *Receptacula* (continuaciones venularum) linearia, crassiuscula.—*Filices præcipue tropicæ*. *Rhizoma repens*. *Fronde sparsæ, coriaceæ aut herbaceæ, simplices, pinnatæ, compositæ vel supradecompositæ, nunc radiato-pedatæ*. *Venæ flabellato-pinnatæ, creberrimæ, internæ, tenuissimæ, pluries furcatæ, venulis parallelis*. *Stipes fusco-ater, nitidus, fragilis*.—Presl.

A. *Capillus Veneris*. L.—(TAB. LXVI. B.).

The habit of this genus is, for the most part, peculiar; but the sorus is frequently so continuous and slender as to bear a great resemblance to that of *Pteris*. The species are very numerous and difficult to be distinguished. Presl constitutes two divisions for them.

§ 1. ADIANTUM. *Sori inæquales, vel lineares continui, vel breviores contigui*; and § 2. ADIANTELLUM. *Sori æquales, globosi, distincti*. *Indusium semilunatum*.—It is obvious that the species here figured belongs to the second.

Fig. 1. Portion of a fertile frond, nat. size; f. 2. Pinnule from the the same, seen from beneath; f. 3. Sorus; f. 4. Indusium forced back to exhibit the sporangia; f. 5. Sporangium; f. 6. Sporules:—magnified.



TAB. LXVII. A.

CHEILANTHES. Presl.

CHEILANTHIS sp. Sw. et Auct.

Sori subglobosi, marginales, apice crenæ dentisve reflexo indusioque obtecti, minuti.

Indusium marginarium, scariosum, angustum, interius dehiscens.—Filices *intra- et extratropicæ*. Rhizoma *repens*. Frondes *sparsæ, herbacæ v. tenuiter coriacæ, pinnatim compositæ, sæpe pilis septatis hirsutæ*. Venæ *pinnatæ, internæ, tenues, simplices, infimæ sæpe furcatæ venulisque divergentibus, apice soriferæ*.—Presl.

C. commutata. Kze.—(TAB. LXVII. A.).

An extensive genus, and sometimes, when the sori are narrow and indistinct, easily confounded with *Notochlæna*.

Fig. 1. Fertile pinnule, seen from beneath ; f. 2. Portion of the same ; f. 3. Hair from the veins ; f. 4. Sorus, with the indusium laid open ; f. 5. Sporangium ; f. 6. Sporules :—*magnified*.

TAB. LXVII. B.

HYPOLEPIS. Bernh. Presl.

LONCHITIDIS sp. L. DICKSONIÆ sp. Spr. CHEILANTHIS sp. Sw. et Auct.

ADIANTI sp. Bory.

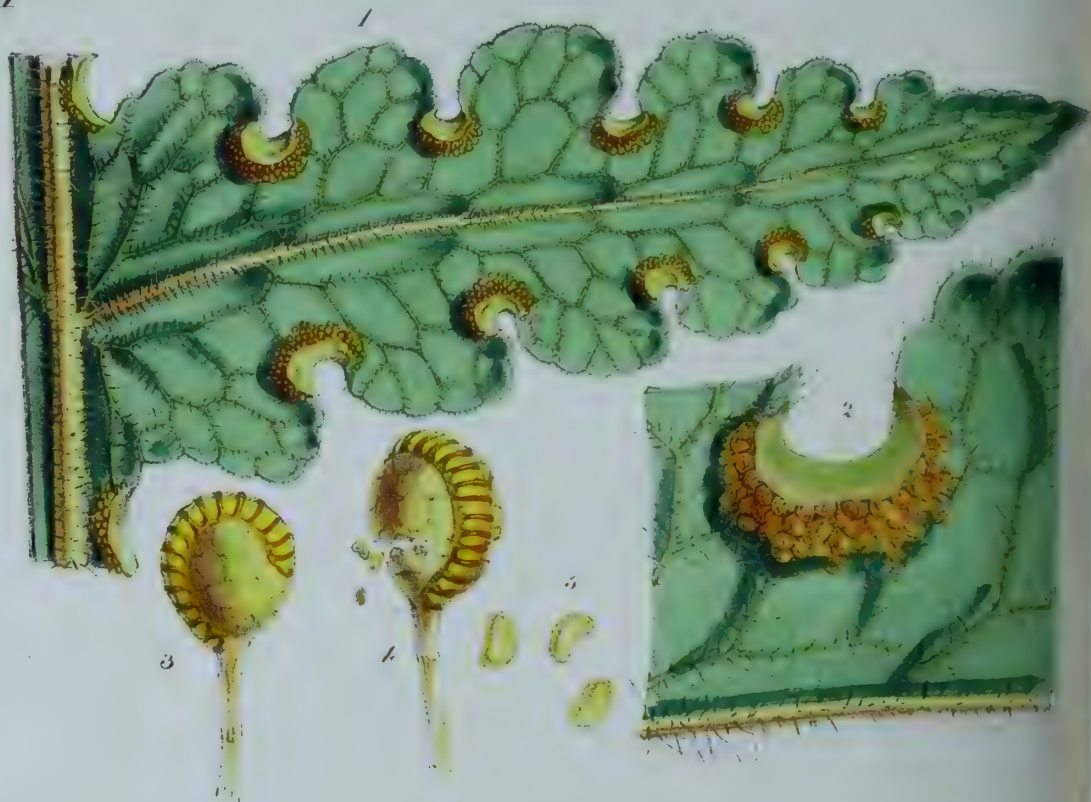
Sori in inferiore latere sinuum laciniarum aut dentium frondis, subglobosi. *Indusium* marginarium, semilunatum, scariosum, interius dehiscens. *Sporangia* paginæ inferiori indusii affixa.(?)—Filices *intratropicæ*. Rhizoma *repens*. Frondes *sparsæ, herbacæ, supradecompositæ, amplæ, stipite rachibusque in H. repente muricatis*. Venæ *pinnatæ, tenues, subtus elevatæ, inferiores furcatæ, superiores simplices, venula superiori sorifera*.—Presl.

H. repens. Presl.—(TAB. LXVII. B.)—*Cheilanthes*. Kaulf.

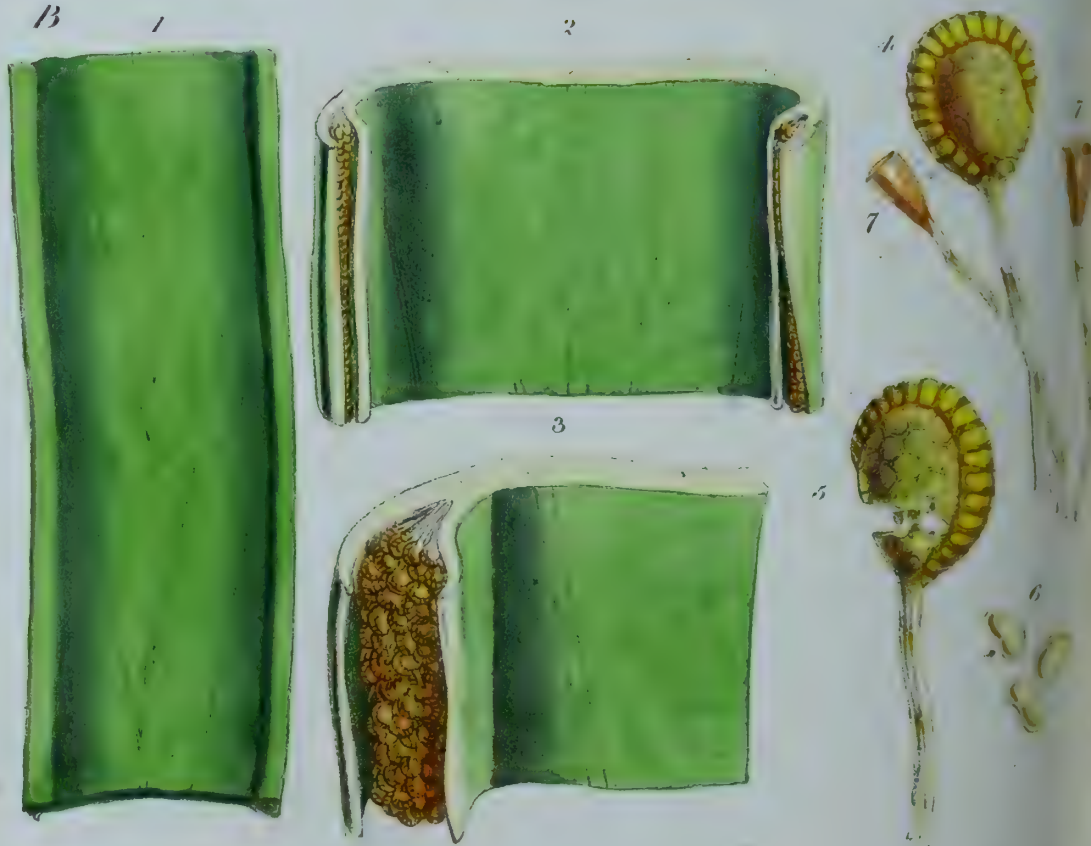
Presl has divided the *Adiantum* or *Pteris* group into two sections ; the first having the sori situated upon the outer margin of the frond, frequently on the teeth or lobes, the latter in the sinuses of the lobes. *Hypolepis* and *Lonchitis* are referred to the latter. *Hypolepis* is further distinguished from *Cheilanthes*, according to Presl, by the sporangia being inserted upon the under-side of the indusium. In our species, which we consider the true *H. repens*, however, the receptacle is below the indusium, upon the apex of a vein. We should say that *Hypolepis*, if deserving of constituting a genus, has the sori of *Lonchitis*, (that is, placed in the sinuses,) and the venation of *Cheilanthes*.

Fig. 1. Upper, and f. 2. under-side of a fertile pinnule ; f. 3. Sori ; f. 4. Indusium laid open, to show the insertion of the sporangia ; f. 5. Sporangium ; f. 6. Sporules :—*magnified*.

A



B



TAB. LXVIII. A.

LONCHITIS. *Presl.*

LONCHITIDIS sp. *Linn. et Auct.*

Sori in sinibus laciniarum frondis, lineares, semilunati, angusti. *Indusium* marginarium, semilunatum, angustum, scariosum, inferiori pagina capsuliferum (?) interius dehiscens.—*Filices intratropicæ*. Rhizoma subglobosum. Frondes fasciculatæ, herbacæ, pinnatæ, pinnis pinnatifidis. Venæ in maculas inæqualiter hexagonoideas anastomosantes, tenues, inferne prominulæ, venulis duabus-quatuor in sinus laciniarum frondis connivendo-excurrentibus.—*Presl.*

L. pubescens. *Kaulf.*—(TAB. LXVIII. A.)—*L. hirsuta*. *Sieb. Fl. Maurit.*

A genus of three species, according to *Presl*, readily distinguished by the nature of the venation.

Fig. 1. Portion of a fertile pinna, seen from beneath; *f. 2.* Sorus; *f. 3, 4.* Sporangia; *f. 5.* Sporules :—*magnified.*

TAB. LXVIII. B.

VITTARIA. *Sm.*

PTERIDIS sp. *Linn.*

Sori lineares, duplicaturæ marginis frondis immersi.—*Filices pleræque intratropicæ.*

Rhizoma repens. Frondes sparsæ, arcte approximatae et congestæ, sessiles vel substipitatæ, simplices, angustæ, coriacæ. Venæ pinnatæ, simplices, elongatæ, ante marginem frondis immersæ.—*Presl.*

V. rigida. *Kaulf.*—(TAB. LXVIII. B.)

Here the actual indusium is none. The sporangia are inserted in a cleft at the margin of the frond.

Fig. 1. Portion of a fertile frond, seen from above; *f. 2.* Smaller portion of the same, seen from beneath; *f. 3.* Portion of a sorus; *f. 4, 5.* Sporangia; *f. 6.* Sporidia; *f. 7, 7.* Abortive sporangia, mixed with the perfect ones :—*magnified.*

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TAB. LXIX. A.

STRUTHIOPTERIS. Willd.

OSMUNDÆ sp. Linn. ONOCLEÆ sp. Sw.

Sori dorsales, medio venæ venulæve inserti, approximati, nudi, dorso pinnarum alteratarum siti. Receptaculum majusculum, globosum. Sporangia longe pedicellata.—*Filix hemisphæricæ borealis, nempe Europæ et Americæ. Frondes fasciculatæ, pinnatæ, pinnis pinnatifidis; fertiles dissimiles, pinnis multoties minoribus angustioribus marginibus insigniter revolutis, indusium mentientibus, soros tegentibus. Venæ pinnatæ, simplices, subtus prominulæ, ad marginem attingentes.*

S. Germanica. Willd.—(TAB. LXIX. A.).

A second species has been generally considered as belonging to this Genus, *S. Pennsylvanica*; but I have shown in the "*Flora Boreali-Americana*," that it is by no means different from the European plant. As a genus it is certainly very nearly allied to *Polypodium*, scarcely differing but in the altered condition of the fertile fronds.

Fig. 1. Portion of a sterile pinna; *f. 2.* Upper, and *f. 3.* Under side of a fertile pinna; *f. 4.* Transverse section of the same; *f. 5.* Portion of the same with the margin forced back; *f. 6, 7.* Sporangia; *f. 8.* Sporules:—*magnified.*

TAB. LXIX. B.

POLYPODIUM. Presl.

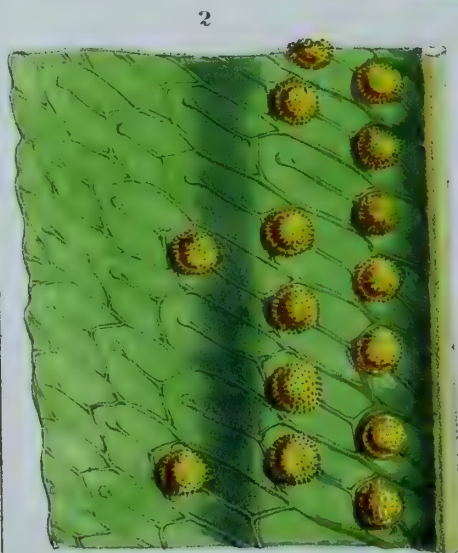
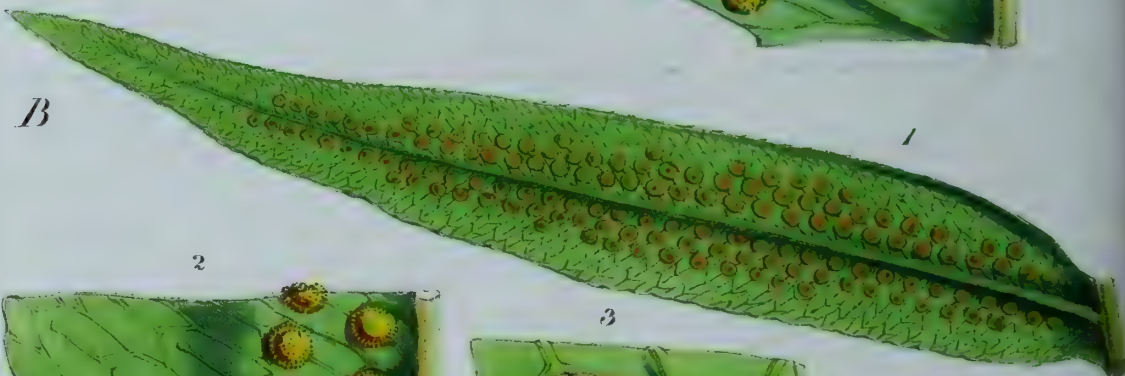
POLYPODII sp. Auct.

Sori in apice venarum simplicium furcaturum aut in dorso medio venarum venularumve, globosi, nudi.—*Filices pleræque intratropicæ. Rhizoma subglobosum aut repens. Frondes fasciculatæ aut sparsæ, herbacæ aut tenuiter coriacæ, rarissime simplices, sæpius pinnatifidæ, sæpissime pinnatim divisæ. Venæ pinnatæ, internæ, aut subtus prominulæ, apice libero globoso-punctiformi aut clavato, simplices aut furcatæ.*—*Presl.*

P. vulgare. L.—(TAB. LXIX. B.).

Presl has, I think, with much judgment, restricted the genus *Polypodium* to those Ferns which have the naked globose sori, and the veinlets simple or forked. Thus circumscribed, it is still an extensive Genus, some inhabiting temperate regions, but the greater number of species, the tropics.

Fig. 1. Portion of a fertile frond seen from beneath; *f. 2.* Segment of the same, do.; *f. 3.* Smaller portion of the same; *f. 4.* Sporangia; *f. 5.* Sporules:—*magnified.*



TAB. LXX. A.

PLEOCNEMIA. Presl.

POLYPODII sp. Gaudich.

Sori in medio dorso venularum, globosi, nudi.—Felix *Moluccana*. Frondes herba-
ceæ, pinnatæ, pinnis pinnatifidis. Venæ pinnatæ, subtus prominulæ, superiores
furcatæ, infimæ oppositæ, in arcum obtusissimum angulatum confluentes, angulis
quatuor tot venulas in sinum laciniarum frondis connivendo-excurrentes gerentibus,
venulis extimis cum venis mox superioribus maculam hexagonoideam efficientibus.
Presl.

Pleocnemia *Leuceana*.—(TAB. LXX. A.—f. 3, copied from Presl.)

I have seen no certain specimen of a Fern corresponding with this Genus. I possess
from Bonin (sent to me by the Imperial Academy of Petersburg), a sterile frond of
which the venation so far agrees that I have thought it right to represent it at f. 1. and
2, of our plate (LXX. A.); but it must be acknowledged that the nerves anastomose very
much, so as to form hexagonal areolæ, when in the true *Pleocnemia*, they are only forked.

Fig. 1. Pinna of a sterile frond of an unknown fern from Bonin ; f. 2. Smaller portion of the same ;
f. 3. Portion of a fertile pinna of *Pleocnemia Leuceana*, (copied from Presl):—magnified.

TAB. LXX. B.

GONIOPHLEBIUM. Presl.

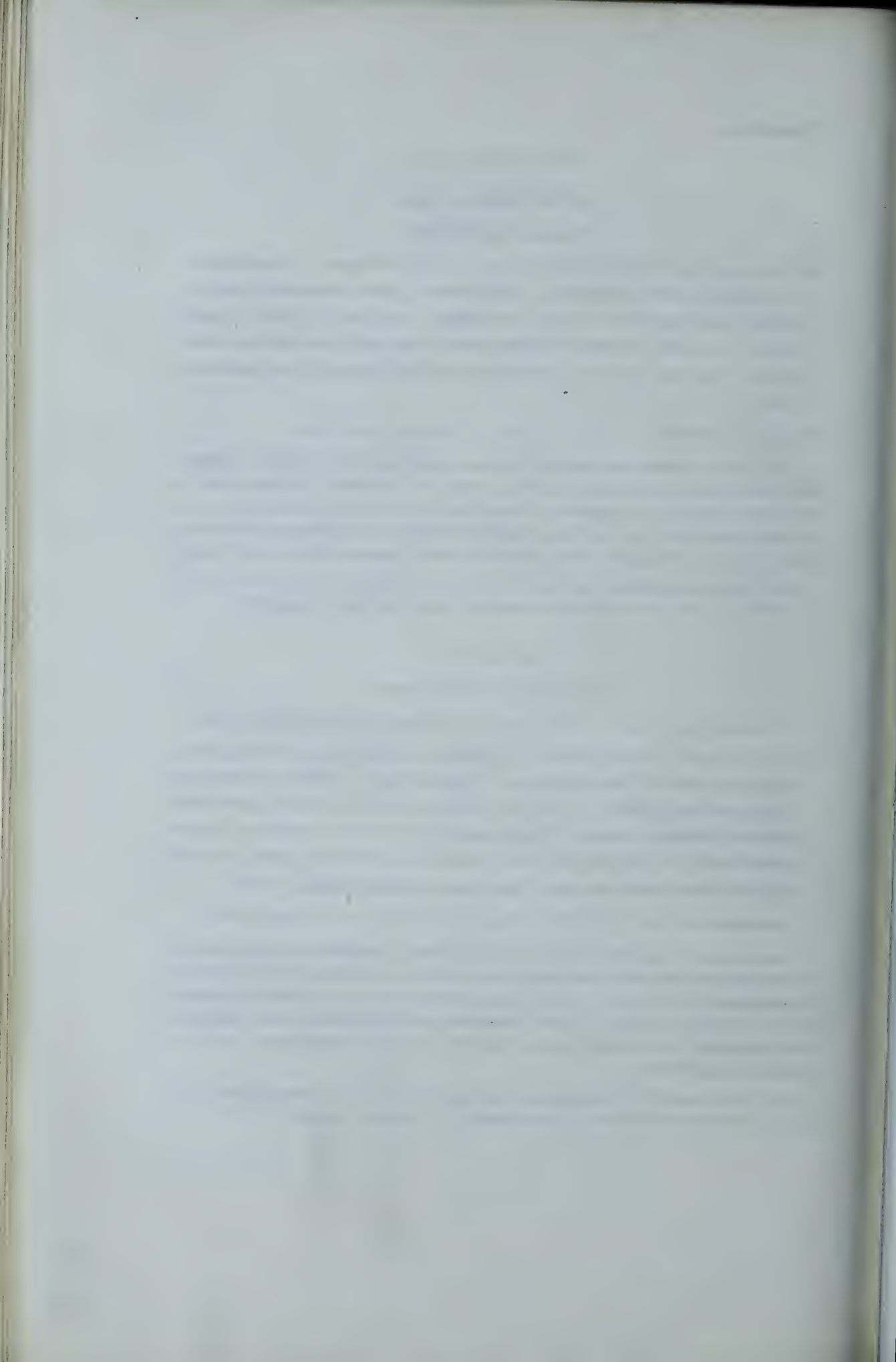
POLYPOD. spur. Sect. 1. GONIOPHLEBIUM. Blume. POLYPODII sp. Auct.

Sori apici venulæ infimæ axillaris et venularum secundariarum inserti, globosi,
satis magni, nudi.—Filices *intratropicæ*. Rhizoma repens. Frondes sparsæ, her-
baceæ et coriaceæ, pinnatæ. Venæ pinnatæ, tenues, internæ, parallelæ, apice libero
globuloso desinentes, ramosæ. Venulæ oppositæ in arcum triangularem acutum
anastomosantes, et inde maculas antice rhomboideas efformantes, infima ex axilla
superiori maculæ costalis emergens, libera, apice globoso-incrassata.—Presl.

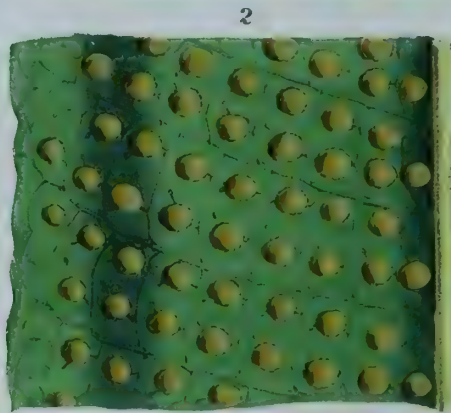
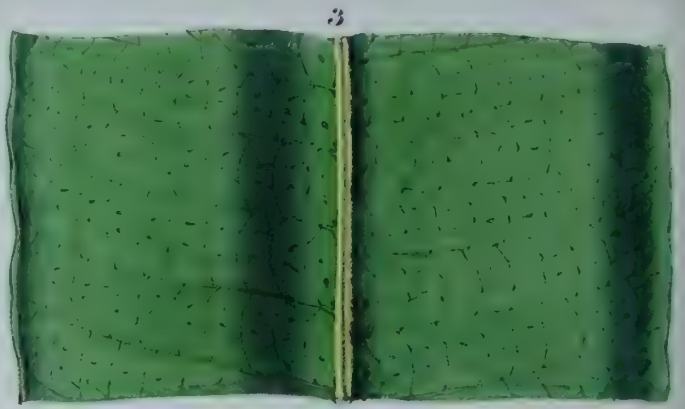
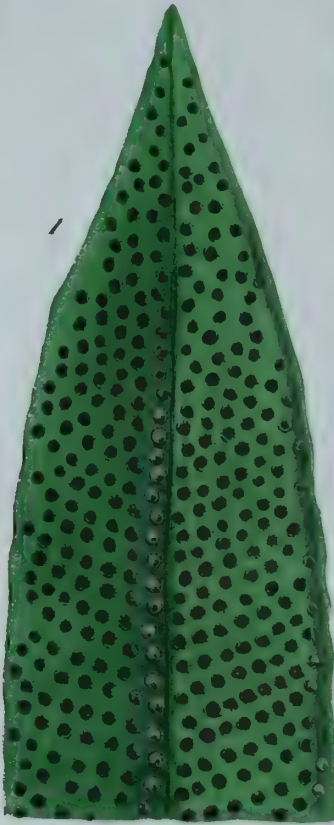
G. neriifolium.—(TAB. LXX. B.)—*Marginaria*. Presl. Polypodium. Schk.

It may appear strange that I should place under Presl's *Goniophlebium* a plant which he
himself refers to *Marginaria*; but, after the most careful examination, I think I cannot err
in representing it as illustrative of that Genus. This would seem to confirm Mr Smith's
opinion, expressed at TAB. LI., that *Marginaria* and *Goniophlebium* should constitute
but one Genus. Of the eight species which Presl refers to *Goniophlebium*, three are
doubtfully placed there.

Fig. 1. Fertile pinna of *G. neriifolium*, seen from beneath, nat. size ; f. 2. Smaller portion of the
same ; f. 3. Sorus and receptacles ; f. 4. 5, Sporangia ; f. 6. Sporules :—magnified.



A



B



TAB. LXXI. A.

CAMPYLONEURUM, Presl.

POLYPODIUM sp. Linn. et Auct.

Sori apici aut dorso venulæ infimæ axillaris et venularum secundariarum insidentes, globosi, parvi, nudi.—Filices *tropicæ*, *Americanæ*. Rhizoma *repens*. Frondes *sparsæ coriaceæ aut herbaceæ, simplices, unica vice pinnatæ*. Venæ *pinnatæ, costæ-formes, parallelæ, ramosæ, apice libero globuloso desinentes*. Venulæ *oppositæ in arcum pluriangulatum anastomosantes, infima ex axilla superiori ad basin venæ inferioris emergens libera, apice globulosa, supremæ in maculas irregulares confluentes*. Venulæ secundariæ *ex angulis arcus exorientes, tot quot anguli, liberæ, apice globulosæ*. Presl.

Campyloneurum repens, Presl.—(TAB. LXXI. A.)—*Polypodium repens*, Sw.

This Genus of Presl's consists of about thirteen described species, all of them, I believe, natives of tropical America and mostly of Brazil. It differs from *Goniophlebium* and *Marginaria*, that author observes, "arcubus venularum pluriangulatis et polysoris atque maculis subparallelogrammis." The name is thence appropriately derived from *καμπυλος arcuatus*, and *νευρον vena*.

TAB. LXXI. A.—Fig. 1. Apex of the frond of *Campyloneurum repens*, nat. size; f. 2. Fertile portion; f. 3. Sterile portion; f. 4, 5. Sporangia; f. 6. Sporules :—magnified.

TAB. LXXI. B.

DICTYOPTERIS. Presl.

Sori anastomosi venularum insidentes, globosi (aut ovales) magni aut parvi, nudi.—Filices *novo-Hollandicæ vel intratropicæ indicæ*. Rhizoma *repens*. Frondes *sparsæ coriaceæ simplices aut pinnatim divisæ*. Venæ *internæ, tenues, ramosissimæ, venulisque in maculas hexagonoideas inæquales anastomosantes et reticulum densum efformantes, marginales apice libero obtusoque desinentes*. Presl.

Dictyopteris attenuata. Presl. (TAB. LXXI. B.)—*Polypodium attenuatum*, Br. P. Brownianum, Spr.

A small Genus, consisting of *D. attenuata*, here figured, a native of New Holland and New Zealand, *D. macrodonta*, *D. pteroides*, and *D. irregularis* from the East Indies, all *Polypodia* of other authors. It differs from *Pleopeltis* and allied Genera in the areolæ of the veins and veinlets constituting a simple reticulation.

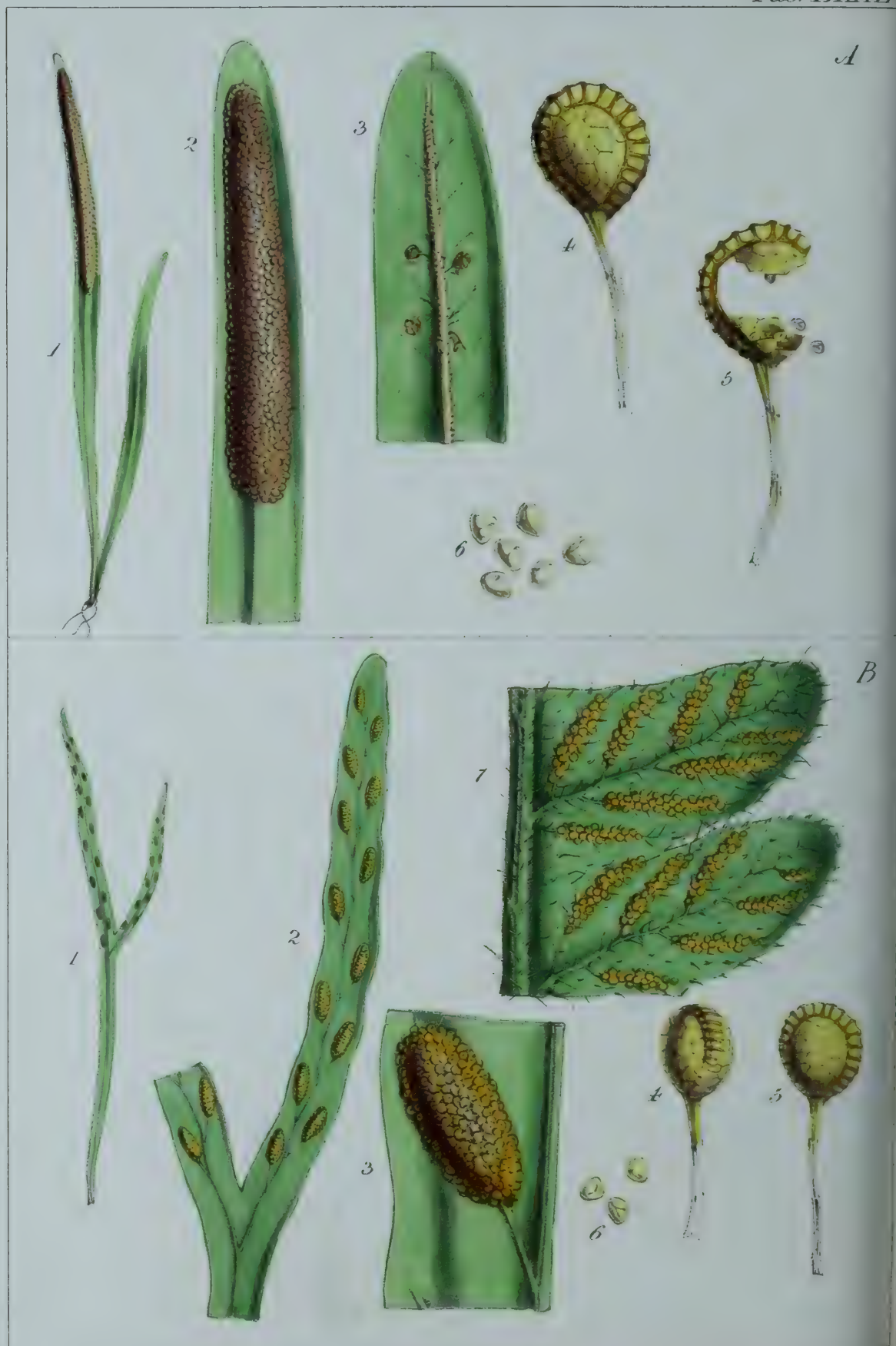
TAB. LXXI. B.—Fig. 1. Frond of *Dictyopteris attenuata*, Presl, nat. size; f. 2. Portion of the same with sori, seen from the upper side; f. 3. Small portion with a sorus and receptacle, seen from beneath; f. 4, 5. Sporangia; f. 6. Sporules; f. 7, 8. Hairs, or abortive sporangia from among the fertile ones :—magnified.

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TAB. LXXII. A.

PLEUROGRAMME. *Presl.*

See the description at TAB. LXXIV. A.

TAB. LXXII. B.

GRAMMITIS. *Presl.*

GRAMMITIDIS, spec. *Sw. et Auct.* POLYPODII, spec. *Willd.* XIPHopteris, *Kaulf.*
MICROPTeris, *Desv.* GYMNOGRAMMITIS, spec. *Sw. et Auct.*

Sori medio dorsi venarum aut venulæ superioris inserti, lineares, parvi, nudi.—
Frondes fasciculatæ aut sparsæ, herbacæ, simplices aut sæpius pinnatæ. Venæ
pinnatæ, simplices aut furcatæ, internæ aut subtus prominulæ, venulisque apice libero
acuto aut punctiformi desinentes. Presl.

Grammitis furcata, *Hook. et Grev.*—(TAB. LXXII. B. *fig.* 1, 6.)

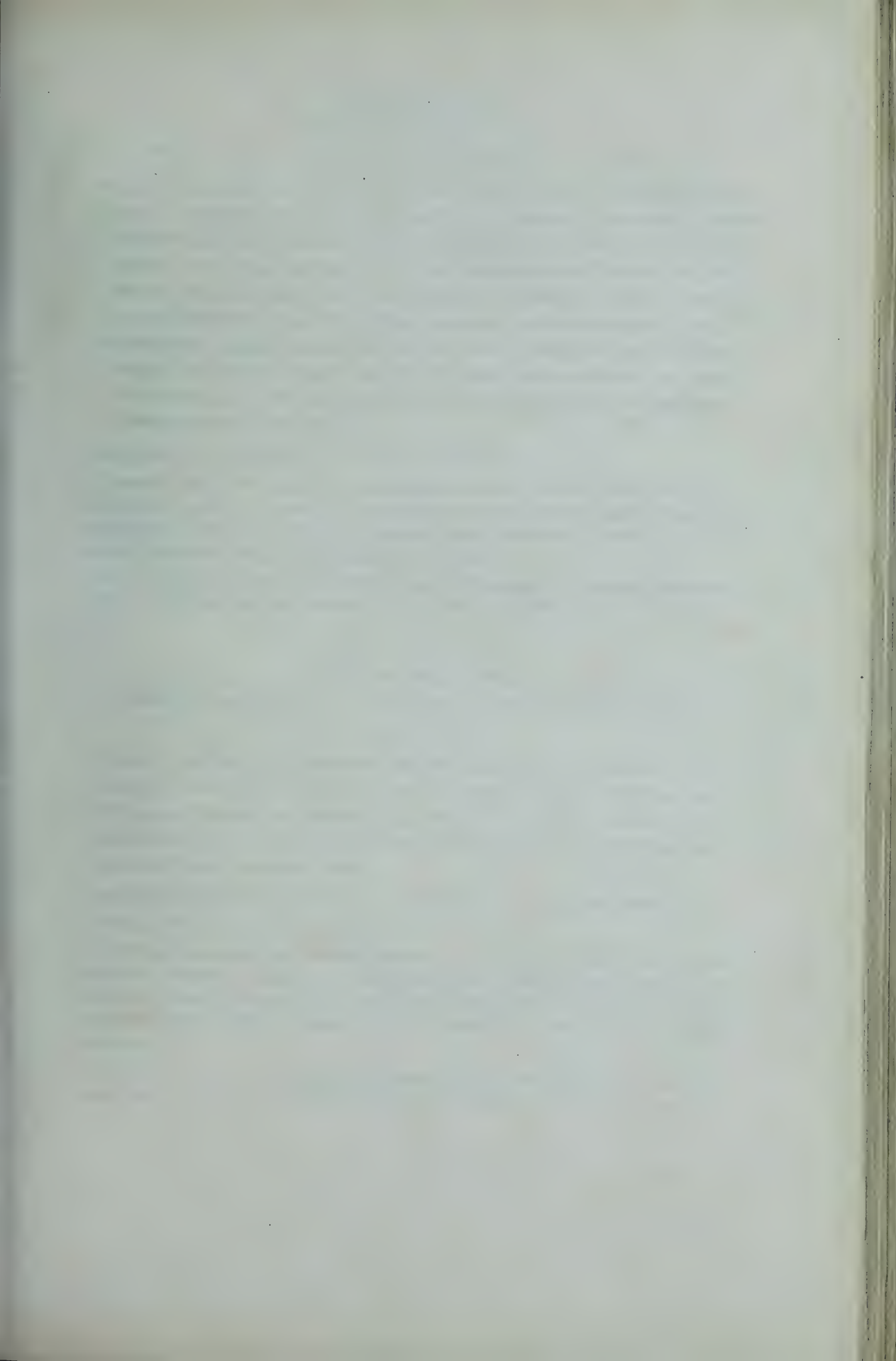
Grammitis totta, *Presl.*—(TAB. LXXII. B. *fig.* 7.)—*Gymnogramme totta*, *Schlecht.*
G. Lovei, *Hook. et Grev.*

Presl seems to have reduced the old genus *Grammitis* with much judgment. He still divides it into 3 groups. § I. XIPHopteris (*Auct.*) *Gr. serrulata*., *Gr. myosuroides*, and *Gr. setosa*.—§ II. CHILOPTeris. *Gr. Billardieri*, *Willd.*, and *Gr. linearis*, *Sw.*—and § III. EUGRAMMITIS, to which belong *Gr. furcata*, *Hook. et Grev.* *Gr. totta*, *Presl.* *Gr. Blumeana*, *Pr.* *Gr. obtusata*, *Pr.* *Gr. villosa*, *Pr.* *Gr. polypodioides*, *Pr.* *Gr. Linkiana*, *Pr.* *Gr. asplenioides*, *Pr.*, and *Gr. severa*, *Pr.*:—all, except the first, are *Gymnogramme* of authors.

TAB. LXXII. B. *Fig.* 1. Frond of *Grammitis furcata*: *nat. size*; *f.* 2. Fertile portion of the same; *f.* 3. Smaller fertile portion of the same; *f.* 4, 5. Sporangia; *f.* 6. Sporules; *f.* 7. Fertile portion of *Gr. totta*:—*magnified.*

The first of these is the fact that the
the second is the fact that the
the third is the fact that the
the fourth is the fact that the
the fifth is the fact that the
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the fifty-second is the fact that the
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TAB. LXXIII. A.
MICROGRAMMA. *Presl.*

POLYPODII, spec. *Schrad.*

Sori dorso venulæ secundariæ intra maculam mediam inserti, ovales, uniseriales, nudi. *Receptaculum* lineare, crassiusculum. *Sporangia* creberrima.—*Filix tropico-Americana*. *Rhizoma repens*. Frondes *sparsæ, herbacæ, brevissime stipitatæ, glaberrimæ, simplices, lineari- aut oblongo-lanceolatæ, acuminatæ, integerrimæ, basi angustatæ*. Venæ *pinnatæ internæ, tenuissimæ, ramosæ*. Venulæ *in maculas costales transversim oblongas irregulares, medias et marginales hexagonideas anastomosantes, maculis mediis interne venulas secundarias in maculas plures oblongas aut irregulares anastomosantes vel liberæ apice punctiformi incrassatas continentibus, marginalibus una-pluribus venulam liberam deflexam apice punctiformi-incrassatam emittentibus*. *Presl.*

Microgramma persicariæfolia. *Pr.*—(TAB. LXXIII. A.)

Presl has derived the generic name from the short sori as compared with other *Grammitideæ*. In point of venation it corresponds with *Presl's* Genus *Pleopeltis* among the *Polypodiaceæ*; and, indeed, the form of the sori seems intermediate between the linear ones of the former group, and the globose ones of the latter.

TAB. LXXIII. *Fig.* 1. Fertile frond of *Microgramma persicariæfolia*; *f.* 2. Smaller portion of the same; *f.* 3. Single sorus; *f.* 4, 5. *Sporangia*; *f.* 6. *Sporules*:—*magnified*.

TAB. LXXIII. B.
LOXOGRAMME. *Presl.*

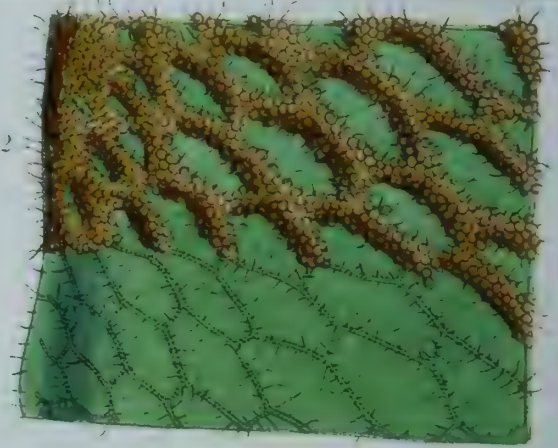
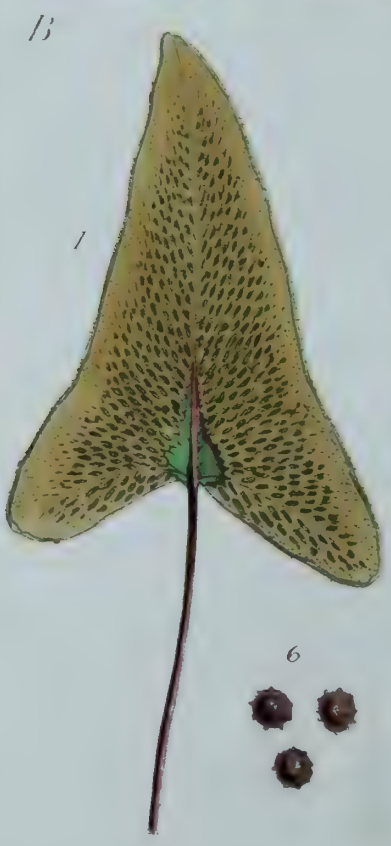
GRAMMITIDIS, spec. *Sw. et Auct.* POLYTENIUM, *Desv.* ANTROPHYI, *Sect. 2.*
LOXOGRAMME, *Blume.*

Sori dorso venæ lateralis longioris unius aut duarum suprapositarum inserti, lineares, elongati, crassi, obtusi, nudi.—*Filices intratropicæ, indicæ*. *Rhizoma repens*. Frondes *sparsæ, coriacæ, simplices, integerrimæ*. Venæ *internæ, tenuissimæ, ramossissimæ, venulisque in maculas hexagonideas elongatas inæquales anastomosantes et reticulum laxum efficientes*. *Presl.*

Loxogramme lanceolata. *Presl.*—(TAB. LXXIII. B.)—*Grammitis lanceolata*, *Sw.*
Antrophyum lanceolatum, *Blume.*

This Genus, the author tells us, holds the same place among *Grammitideæ*, that *Sagenia* does among *Aspidiaceæ*, *Dictyopteris* among *Polypodiaceæ*, *Pteropsis* among *Fœnitideæ* and *Pæcilopteris* among *Acrostichaceæ*. All the species are of Indian origin (ten of them), except *L. lineata* (*Hemionitis lineata*, *Sw.*), which indeed has some points of structural difference.

TAB. LXXIII. B. *Fig.* 1. Portion of a fertile frond of *Loxogramme lanceolata*: *nat. size*; *f.* 2. Smaller portion; *f.* 3, 4, 5, 6. *Sporangia*; *f.* 7. *Sporules*:—*magnified*.



TAB. LXXIV. A.

SELLIGUEA. *Bory.*

CETERACHIS, spec. *Hook. et Grev.* POLYPODII et GRAMMITIDIS, spec. *Wall.*

Sori dorso venularum suprapositarum inserti, lineares, elongati, crassi, continui, rarius interrupti, inter venas uniseriales, nudi.—*Filices intratropicæ, indicæ.* *Rhizoma repens.* *Frondes sparsæ, simplices, unica vice pinnatifidæ, similes herbaceæ, aut dissimiles sterilibus herbaceis fertilibus subinde coriaceis.* *Venæ pinnatæ, parallelæ, ramosissimæ.* *Venulæ internæ, primariæ in maculas hexagonideas plus minus regulares anastomosantes, secundariæ in maculas minores irregulariter angulatas confluentes, aut liberæ apice globuloso-incrassatæ simplices furcatæve rectæ hamatæve.*

Selliguea Wallichiana. *Hook. Ic. Plant, v. 3. t. 204.*

Grammitis macrophylla. *Wall. Cat. (non Blume.)*

What *Phymatodes* is to *Polypodiaceæ*, (especially the section *Pleuridium*), *Aspidium* to *Aspidiaceæ*, *Amphiblestra* to *Adiantaceæ* and *Gymnopteris* to *Acrostichaceæ*, *Selliguea* is to *Grammitideæ*.

TAB. LXXIV. B.

HEMIONITIS. *Linn.*

HEMIONITIS, *Sw.* ANTROPHYUM, *Kaulf.*

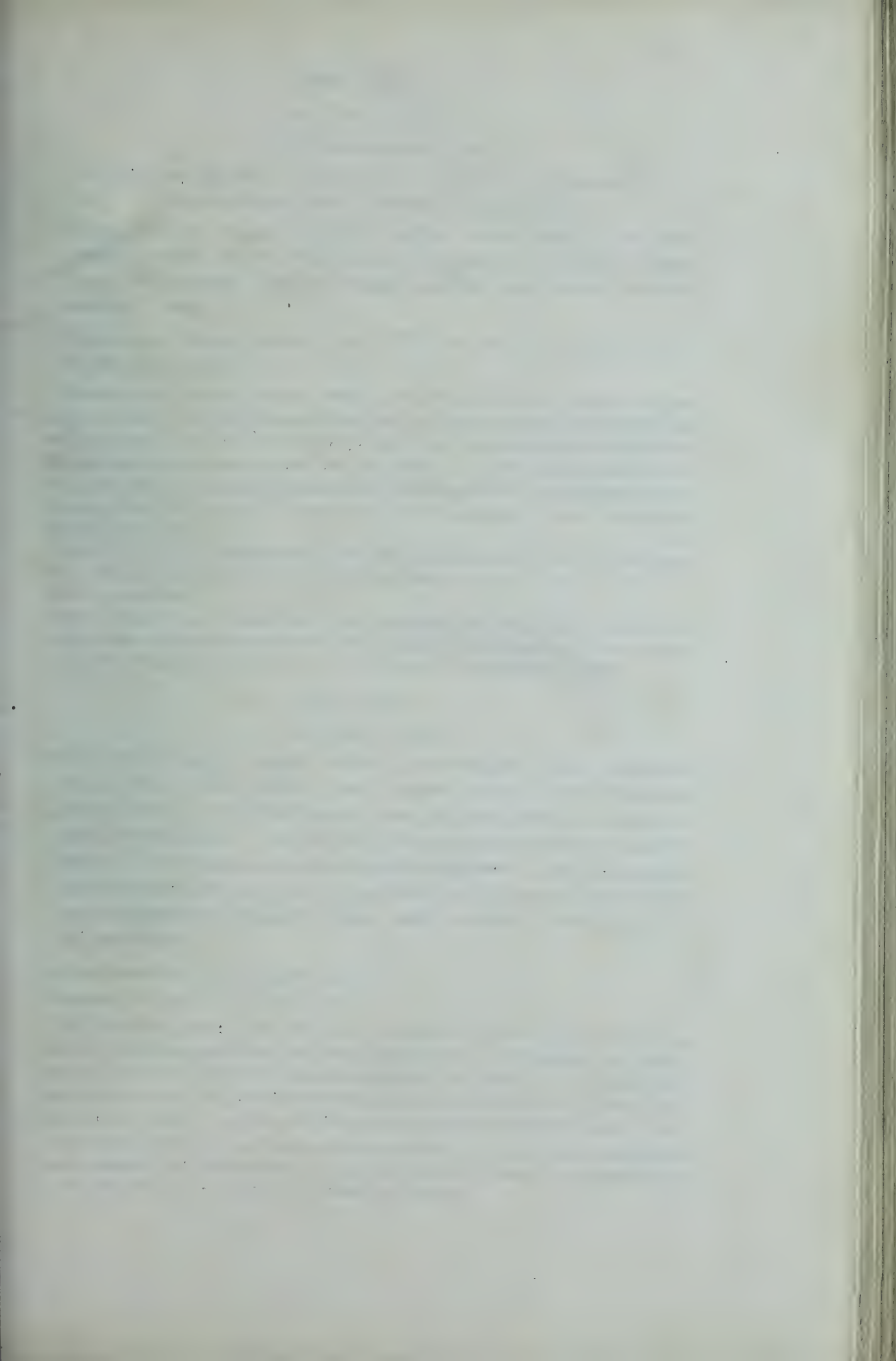
Sori lineares, angusti, elongati, sæpe immersi, nudi, venarum venularumque dorso insidentes.—*Filices intratropicæ.* *Frondes fasciculatæ, coriaceæ, simplices, integerrimæ, aut palmato-tri-quinquelobæ profunde lateque crenatæ, sinibus gemmiferis.* *Venæ ramosissimæ in maculas hexagonideas inæquales ut plurimum elongatas anastomosantes, internæ tenues aut elevata costulæformes.* *Presl.*

Hemionitis cordata, Roxb.—(TAB. LXXIV. B.)

Presl unites *Antrophyum*, notwithstanding its peculiar habit, with *Hemionitis*; they however form 2 sections, chiefly distinguished by the rounded elongated sorus (*Hemionitis*) and the short flattened one (*Antrophyum*).

TAB. LXXIV. B. *Fig. 1.* Fertile frond of *Hemionitis cordata*: nat. size; *f. 2.* Portion of the same, showing the veins and sori; *f. 3, 4, 5.* Sporangia; *f. 6.* Sporules; *f. 7, 8, 9.* Hairs from the veins and margin:—*magnified.*





TAB. LXXV. A.

(And TAB. LXXII. A.)

PLEUROGRAMME. Presl.

GRAMMITIDIS spec. Willd. TÆNITIDIS spec. Kaulf. Spr. ANTROPHYI sect.

PLEUROGRAMME, Blume. MICROPTERIS, spec. Desv.

Sori utrinque costæ contigui et paralleli, continui, lineares, nudi.—*Filices intra-tropicæ*. *Rhizoma repens*. *Frondes sparsæ, tenuiter coriaceæ, simplices, integerrimæ*. *Venæ pinnatæ, distantes, internæ, simplices, apice libero punctiformi desinentes*. Presl.

Pleurogramme linearis, Presl.—(TAB. LXXV. A. and TAB. LXXII. A.)—*Tænitis linearis*, Kaulf.

The sori on each side the costa are often so confluent that the Genus may at first sight readily be mistaken for *Microgramme*, Presl; and, during the author's unavoidable late and long absence from home, this state of the plant was inadvertently figured by the artist for the Genus *Microgramme* of Presl, at TAB. LXXII. A. of this work; which must be our apology for the Genus *Pleurogramme* being twice represented. Only 3 species are included by Presl;—*P. linearis*, *P. pumila*, Presl, and *P. graminifolia*, Presl; all species of *Tænitis* of other authors.

TAB. LXXV. Fig. 1. Sterile and fertile fronds of *Pleurogramme linearis*: nat. size; f. 2. Portion of the same; f. 3. Smaller portion of do., showing the insertion of the sori; f. 4, 5. Sporangia; f. 6. Sporules:—magnified.

TAB. LXXII. A. Fig. 1. Fertile frond of the same plant; f. 2. Smaller portion of do.; f. 3. Smaller portion, the sporangia mostly removed, but the figure is incorrect as giving the appearance of the sporangia arising from the costa itself; f. 4, 5. Sporangia; f. 6. Sporules:—magnified.

TAB. LXXV. B.

JENKINSIA. Hook.

Sorus linearis, elongatus, continuus, nudus, prope marginem avium frondis difformis.—*Filix tropica, Indica*. *Frondes pinnatæ, dissimiles, foliolis lanceolatis undulato-dentatis, coriaceo-membranaceis, sæpe proliferis, fertilibus angustioribus, pinnis lato-marginatis*. *Venæ pinnatæ, subtus præcipue prominentes, parallelæ, strictæ*. *Venulæ oppositæ, in arcus biangulatos confluentes, venulis secundariis ex angulis arcuum liberis apice clavatis, aut in sinum arcus superioris in pinnis fertilibus excurrentibus (marginantibus liberis nudis) in sterilibus omnibus usque ad marginem liberis*.

Jenkinsia undulata.—(TAB. LXXV. B.)

Notochlæna undulata, Wall. Cat. n. 140.

This fine Fern, found by Dr Wallich at Martaban, will hold the place among the *Tænitideæ*, that *Campyloneurum* does among *Polypodiaceæ*, and *Campium* (Pr.) among *Acrostichaceæ*.—I have named the Genus in compliment to Captain Jenkins, who has sent large collections of Assam plants to the Nat. Hist. Society of Cornwall, of which I have been allowed liberally to partake, and which contain many interesting East Indian Ferns.

TAB. LXXV. B. Fig. 1. Sterile pinna of *Jenkinsia undulata*: nat. size; f. 2. Small portion of the same:—magnified; f. 3. Fertile pinna of the same: nat. size; f. 4. Portion of the same with part of the sori removed; f. 5, 6. Sporangia; f. 7. Sporules:—magnified.

A.



B.



TAB. LXXVI. A.

NOTHOLÆNA. *Br. Presl.*

ACROSTICHI spec. *Linn.* NOTOCHLÆNÆ spec. *Kaulf. et Auct.*

Sorus marginalis, linearis, continuus, nudus. *Sporangia* breviter pedicellata.—

Rhizoma repens. Frondes *sparsæ, coriaceæ, pinnatæ aut bipinnatæ, subtus aut paleis densissime imbricatis aut farina aut tomento obtectæ.* Venæ *pinnatæ, creberrimæ, internæ, tenuissimæ, uni-bi-trifurcatæ, venulisque apice acuto desinentibus parallelæ.* *Presl.*

Notholæna tenera, Hook. Bot. Mag. t. 3055.—(TAB. LXXVI. A.)

This and some other of the species of this Genus have a narrow revolute margin, more or less covering the sorus, so as to give the appearance of an indusium.

TAB. LXXVI. A. *Fig. 1.* Portion of a fertile frond of *Notholæna tenera*; *f. 2.* Single pinna; *f. 3, 4, 5.* Sporangia; *f. 6.* Sporules:—*magnified.*

TAB. LXXVI. B.

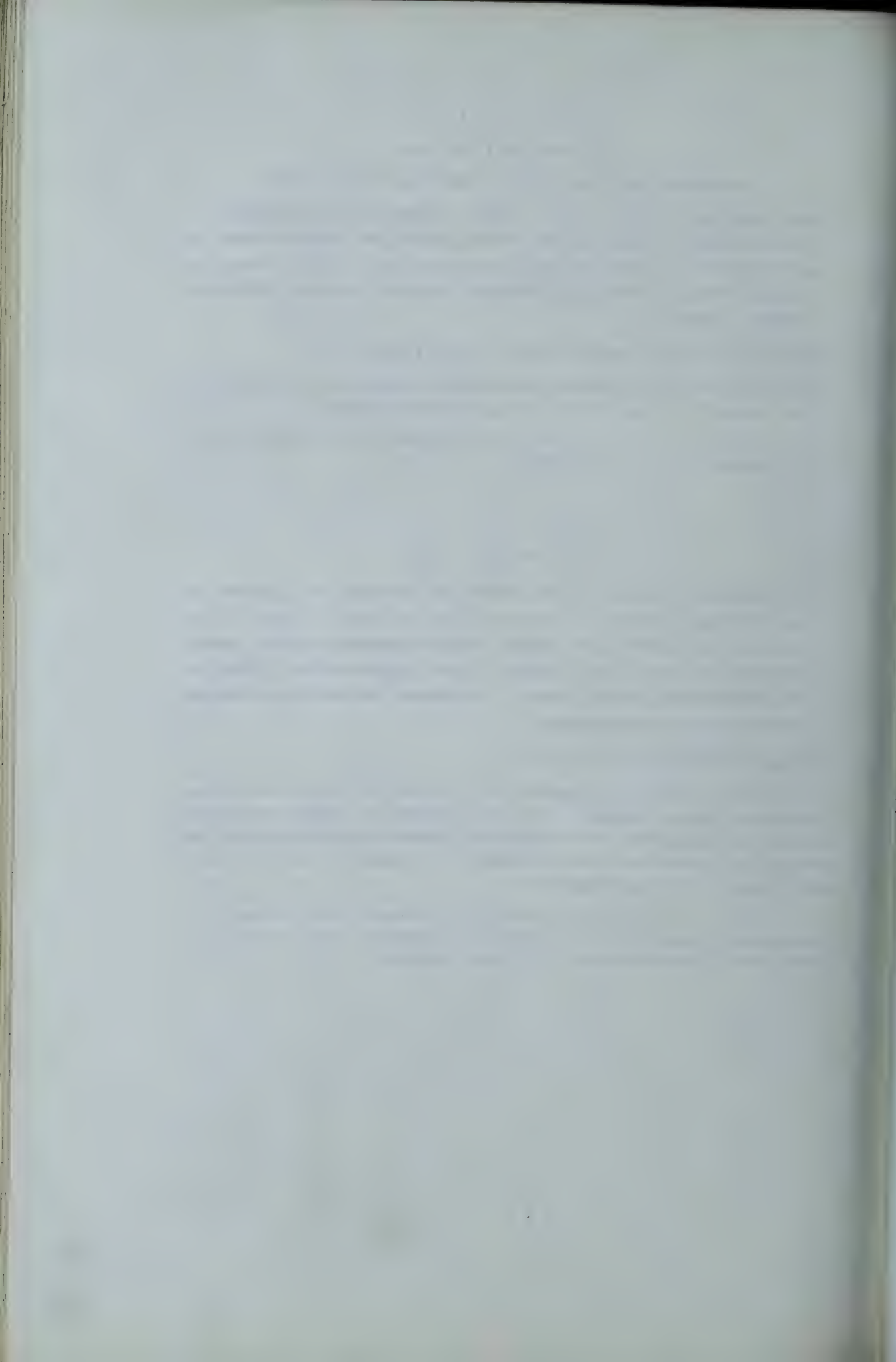
TÆNIOPTERIS. *Hook.*

Sori submarginales, lineares, elongati, continui vel interrupti, nudi, profunde immersi, utrinque subattenuati. *Sporangia* longe stipitata, pilis copiosis articulatis (sporangii abortivis) apice glandula turbinata terminatis immixta. *Sporulæ* reniformes, pellucidæ.—*Filix Africana.* Frons *elongato-lanceolata, falcata, sessilis, coriaceo-carnosa, simplex, costata.* Venæ *pinnatæ, internæ, obliquæ, parallelæ, simplices, usque ad sorum attingentes.*

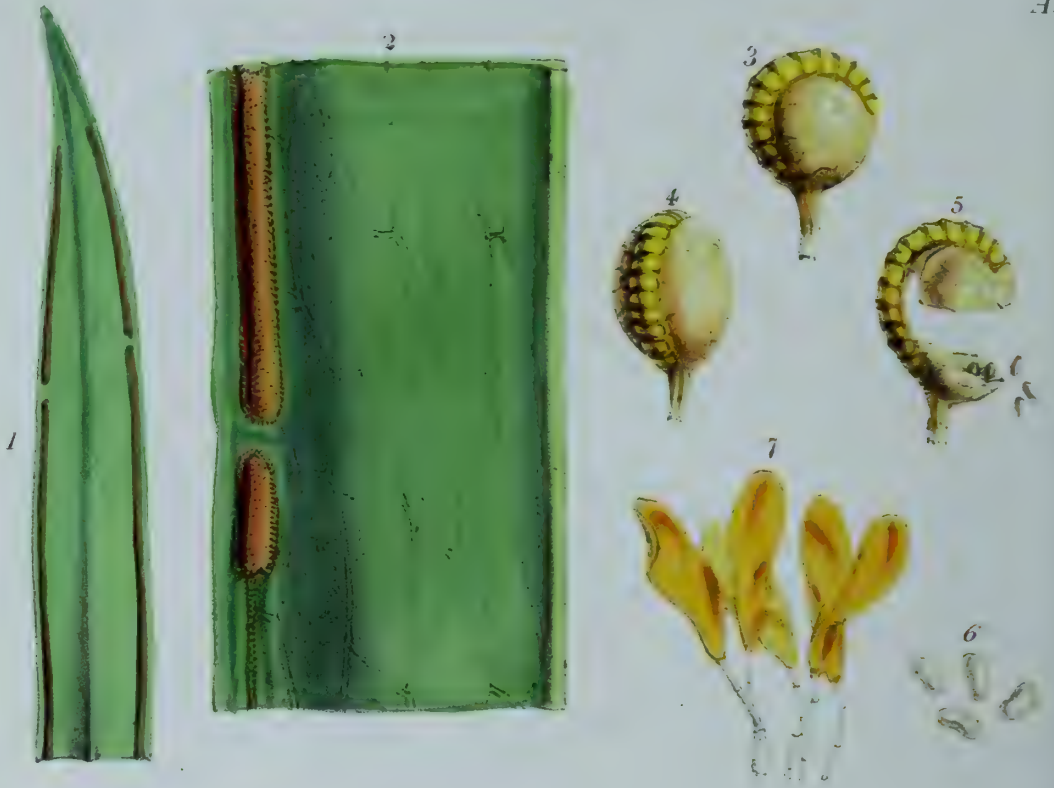
Tæniopteris Forbesii, (TAB. LXXVI. B.)

This Fern was gathered in Mozambique by Mr Forbes, one of the collectors for the Horticultural Society of London. I had at first considered it a *Vittaria*, with which it agrees in habit and venation:—but the sorus is by no means in the margin or edge of the frond, but on the under side within the margin, as in *Pteropsis*, from which the venation and sunken sori will at once distinguish it.

TAB. LXXVI. B. *Fig. 1.* Portion of a fertile frond of *Tæniopteris Forbesii*: *nat. size*; *f. 2.* Smaller portion with sorus; *f. 3.* Section of a sorus; *f. 4, 5.* Sporangia; *f. 7, 8, 9.* Capitate hairs or abortive sporangia among the perfect ones; *f. 6.* Sporules:—*magnified.*

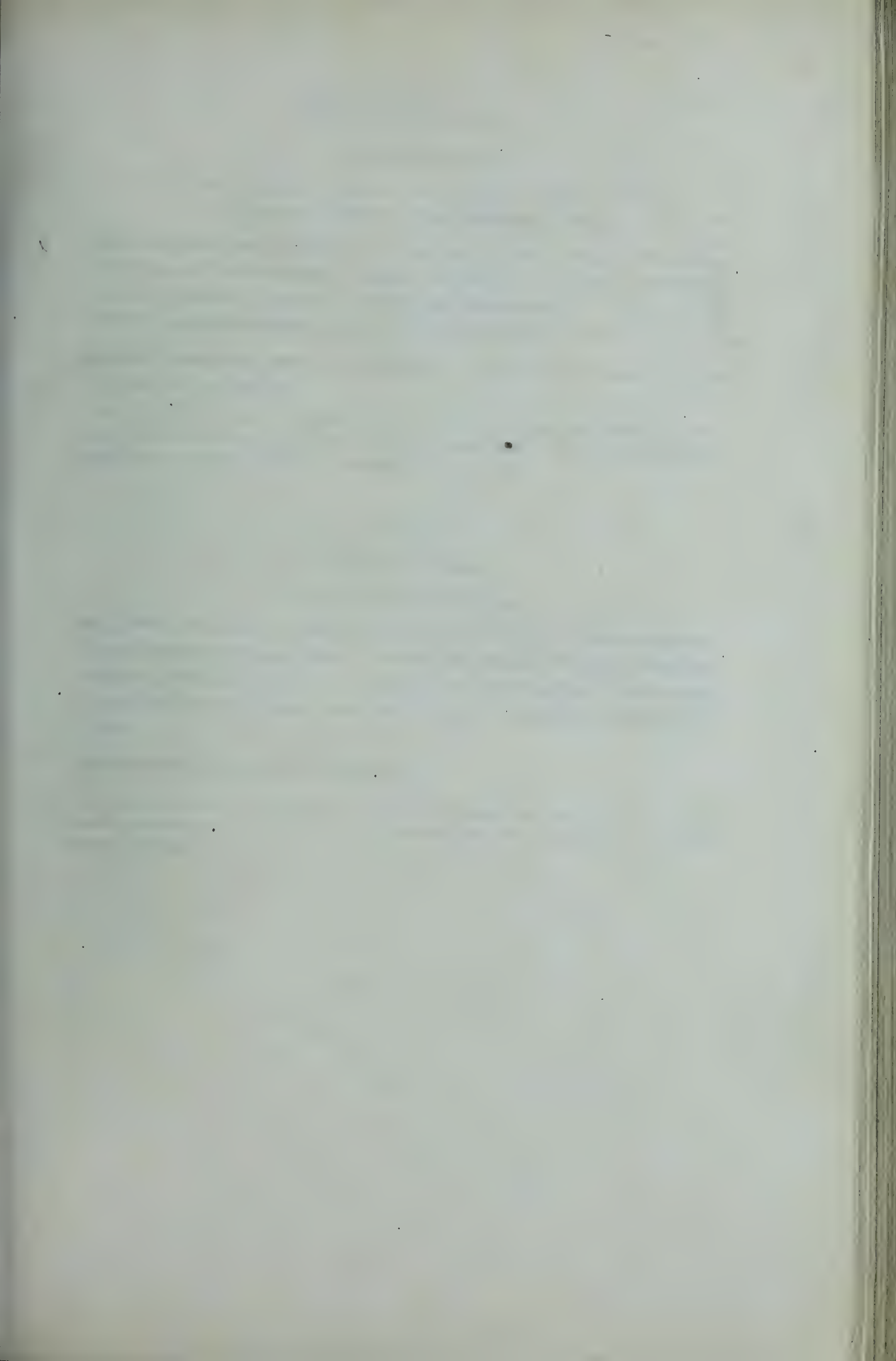


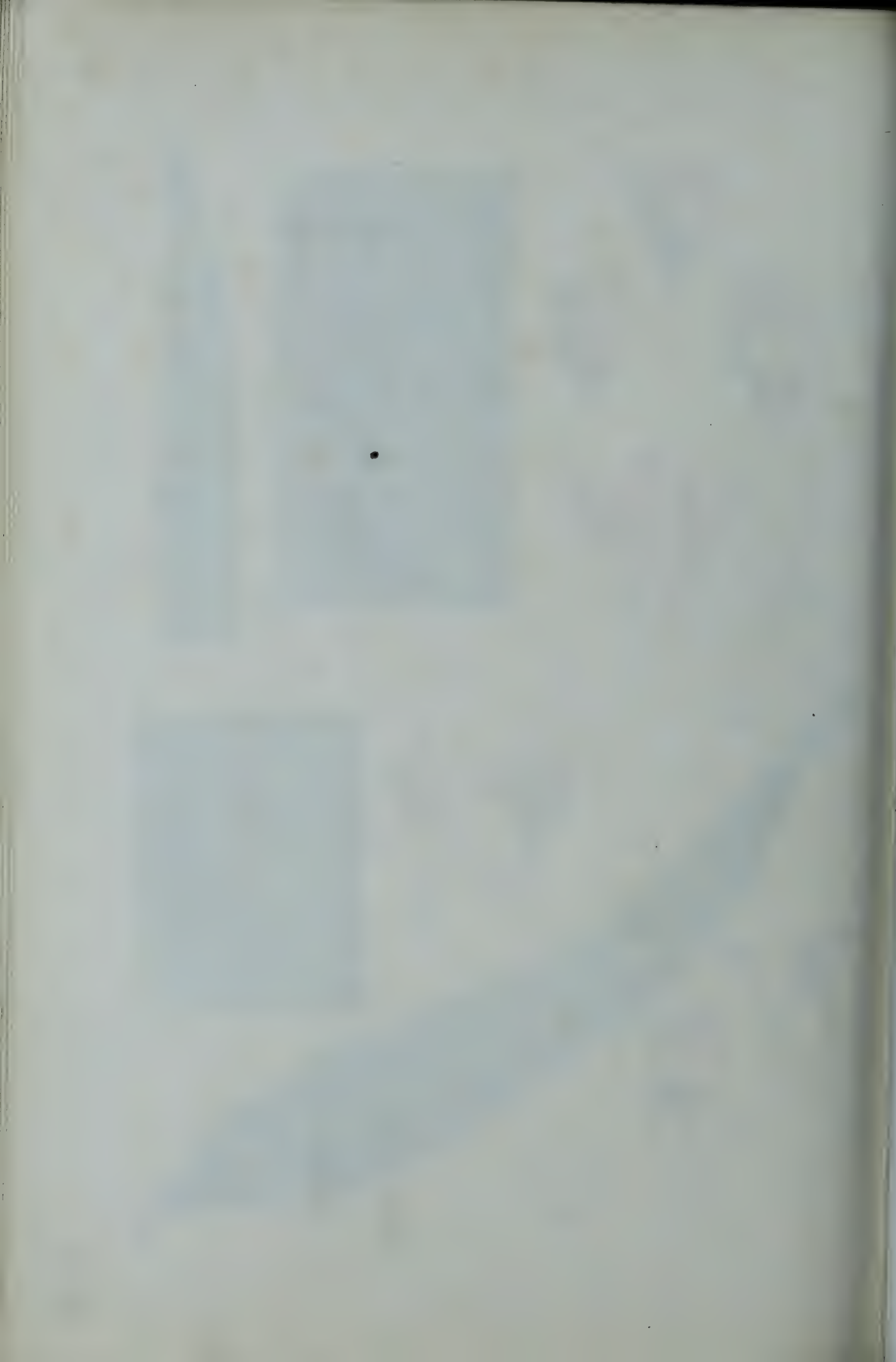
A.



B.







TAB. LXXVII. A.

PTEROPSIS. Presl.

PTERIDIS spec. Linn. TÆNITIDIS spec. Willd. ANTROPHYI sect.

CHILOGRAMME, Blume. PTEROPSIDIS spec. Desv.

Sorus marginalis, linearis, continuus, (vel interruptus) nudus. *Receptaculum* lineare, elevatum.—*Filices intratropicæ pleræque Americanæ*. *Rhizoma subrotundum*. *Frondes fasciculatæ, coriaceæ, simplices aut dichotomo-lobatæ*. *Venæ internæ, ramosæ, venulisque in maculas hexagonoideas anastomosantes*. Presl.

Pteropsis angustifolia, Desv.—(TAB. LXXVII. A.)—*Pteris angustifolia*, Sw.
Tænitis angustifolia, Spr.

TAB. LXXVII. A. *Fig. 1.* Portion of a fertile frond of *Pteropsis angustifolia* :—*nat. size* ; *f. 2.* Smaller portion of the same ; *f. 3, 4, 5.* Sporangia ; *f. 6.* Sporules ; *f. 7.* Sterile or abortive sporangia, found copiously among the fertile ones :—*magnified*.

TAB. LXXVII. B.

TÆNITIS. Sw. Presl.

TÆNITIDIS spec. Willd. et Auct.

Sori in medio disco frondis solitarii, lineares, continui, nudi. *Sporangia* pedicellata.—*Filices intratropicæ, Indicæ*. *Rhizoma subrotundum*. *Frondes fasciculatæ, coriaceæ, pinnatæ, fructiferæ venis venulisque supra læviter lineatæ*. *Venæ pinnatæ, crebræ, internæ, tenues, ramosæ, venulisque in maculas hexagonoideas anastomosantes*. Presl.

Tænitis blechnoides, Sw.—(TAB. LXXVII. B.)

TAB. LXXVII. B. *Fig. 2.* Fertile pinna of *Tænitis blechnoides* : *nat. size* ; *f. 1.* Portion of the same with part of the sorus removed ; *f. 3, 4, 5.* Sporangia mixed with abortive ones ; *f. 6.* Abortive sporangia :—*magnified*.





TAB. LXXVIII. A.

DRYMOGLOSSUM. Presl.

PTERIDIS spec. Linn. NOTOCHLÆNÆ spec. Kaulf. PTEROPSIDIS spec. Desv.

Sori in fronde fertili dissimili marginales (vel submarginales), lineares, continui.—
Filices intratropicæ, Indicæ. Rhizoma repens, filiforme. Frondes sparsæ, coriaceæ, simplices, steriles, in unica specie (*D. piloselloidi*) *subsessiles, late lanceolatae, obtusæ, in altera specie* (*D. spathulato*) *stipitatæ, elliptico-lanceolatae, utrinque acutæ, fertiles stipitatæ, lineari-spathulatæ. Venæ internæ, tenuissimæ, ramosissimæ. Venulæ primariæ in maculas hexagonoideas subrotundas anostomantes, secundariæ liberæ, obtusæ, simplices, ramosæve, rectæ hamatæve. Presl.*

Drymoglossum carnosum (TAB. LXXVIII. A.); *sori* versus medium intra marginem et costam setis.

Notochlæna (*Tænitis* ?) *carnosa, Wall. Cat. n. 138.*

Our plant is from Nepal. It differs, in the situation of the *sori*, from the two hitherto known species (*D. piloselloides* and *D. spathulatum*), in the lines of fructification being at a distance from the margin, in the middle as it were, between that and the costa. Among the sporangia are found peltate scales, not the stellated hairs described by Presl.

TAB. LXXVIII. B.

POLYBOTRYA. Humb. et Bonpl.—Presl.

POLYBOTRYÆ spec. Kaulf. Spr. Blume.

Sorus superficialis, frondis fertilis dissimilis paginam totam inferiorem, nonnunquam et superiorem, obtegens.—*Filices intratropicæ, pleræque Americanæ. Rhizoma repens. Frondes sparsæ, herbaceæ, dissimiles, pinnatæ, bi-tripinnatæ; pinnæ laciniæve fertiles angustæ, breves, venis tenuissimis instructæ. Venæ pinnatæ, internæ, tenues, simplices, apice obtuso libero desinentes, paginam superiorem frondis sterilis lineantes, infimæ in sinus dentium aut laciniarum excurrentes. Presl.*

Polybotrya osmundacea, Humb. et Bonpl.—(TAB. LXXVIII. B.)

Nine species are enumerated by Presl as belonging to this Genus:—the present is the original species of Humboldt and Bonpland.

TAB. LXXVIII. B. *Fig. 1.* Portion of a sterile frond of *Polybotrya osmundacea*: *nat. size*; *f. 2.* Smaller portion of the same: *magnified*; *f. 3.* Fertile portion of the same: *nat. size*; *f. 4, 5.* Smaller portions of the same seen on both sides; *f. 6, 7.* Sporangia; *f. 8.* Sporules:—*magnified*.

A



B



TAB. LXXIX. A.

OLFERSIA. *Raddi.*

ACROSTICHI spec. *Linn.* POLYBOTRYÆ spec. *Kaulf.* LOMARIÆ spec. *Kaulf.*

ELAPHOGLOSSUM et RHIPIDOPTERIS, *Schott.*

Sorus superficialius, totam paginam frondis inferiorem, unica vice et superiorem obtegens.—Filices *præcipue tropicæ*. Rhizoma *repens*. Frondes *sparsæ, herbaceæ v. coriaceæ, simplices, rarius pinnatæ, fertiles sterilibus paullo dissimiles, angustiores, breviores, longiusque stipitatæ*. Venæ *pinnatæ, creberrimæ, simplices furcatæve, venulisque parallelæ, apice libero acuto aut punctiformi-incrassato desinentes, aut internæ tenuissimæ aut utrinque elevatæ costulæformes*. *Presl.*

Olfersia Corcovadensis, Raddi.—(TAB. LXXIX. A.)—*Acrostichum linearifolium, Presl.* *Polybotrya Raddiana, Kaulf.* *Acrostichum sorbifolium, Hort. Angl. et Berol.*

As *Presl* has defined *Olfersia* it differs from *Polybotrya* in the parallel veins and veinlets which have their origin at a slightly acute angle; and from *Acrostichum* in the veins and veinlets being free, not anastomosing.

TAB. LXXIX. A. *Fig. 1.* Pinna from a sterile frond of *Olfersia Corcovadensis*: *nat. size*; *f. 2.* Small portion of the same: *magnified*; *f. 3.* Fertile pinna: *nat. size*; *f. 4, 5.* Sporangia; *f. 6.* Sporules:—*magnified*.

TAB. LXXIX. B.

ACONIOPTERIS. *Presl.*

ACROSTICHI spec. *Hook. et Grev.*

Sorus superficialius, totam paginam inferiorem frondis fertilis subdissimilis obtegens.

—Felix *Madraspatana et ex S. Helena*. Rhizoma *repens*. Frondes *sparsæ, simplices, coriaceæ, stipitatæ: steriles oblongo-lanceolatæ, acutæ, marginatæ, supra squamis peltatis lacero-fimbriatis conspersæ, subtus densissime elevato-ferrugineo-punctatæ: fertiles lineari-lanceolatæ acuminatæ longius stipitatæ*. Stipes *costaque dense paleaceus ac ferrugineo-elevato-punctatus vel potius verrucosus*. Venæ *pinnatæ, creberrimæ, parallelæ, subtus costæformes, simplices vel ad basin furcatæ, venulisque apice in arcum triangularem acutiusculum anastomosantes, venula secundaria clavata libera ex apice arcus emergente*. *Presl.*

Aconiopteris subdiaphana, Presl.—(TAB. LXXIX. B.)—*Acrostichum subdiaphanum, Hook. et Grev.*

TAB. LXXIX. B. *Fig. 1.* Portion of a sterile frond of *Aconiopteris subdiaphana*: *nat. size*; *f. 2.* Smaller portion of the same, under side; *f. 3.* Lesser portion seen from above; *f. 4, 5.* Scales from the upper side of the frond: *magnified*; *f. 6.* Fertile frond, removed from the stipes: *nat. size*; *f. 7, 8.* Sporangia; *f. 9.* Sporules:—*magnified*.





TAB. LXXX. A.

CAMPIUM. Presl.

ACROSTICHI spec. *Auct.* BOLBIDITIS spec. *Schott.*

Sorus superficialius, totam paginam inferiorem frondis obtegens.—*Filices intra-tropicæ, Indicæ. Rhizoma repens. Frondes sparsæ, herbacæ aut coriacæ, pinnatæ. Venæ pinnatæ, internæ tenuissimæ aut crassæ costæformes, pinnato-venulosæ, sæpe apice libero punctiformi-incrassato aut obtuso desinentes. Venulæ oppositæ in arcus obtusissimos aut acute triangulares anastomosantes, supremæ subinde in maculas irregulares confluentes, venulis secundariis ex apice arcuum solitariis liberis aut in sinum arcus mox superioris excurrentibus. Presl.*

Campium subcrenatum, Presl.—(TAB. LXXX. A.)—*Acrostichum subcrenatum, Wall.*

C. punctulatum, C. costatum, C. repandum, C. subcrenatum, and C. virens (all *Acrosticha* of other authors, and all natives of the East Indies), are what Presl refers to this Genus.

TAB. LXXX. Fig. 1. Portion of a fertile frond of *Campium subcrenatum*: nat. size; f. 2, 3, 4. Sporangia; f. 5. Sporules: magnified; f. 6. Pinna of a sterile frond: nat. size; f. 7. Portion of the same:—magnified.

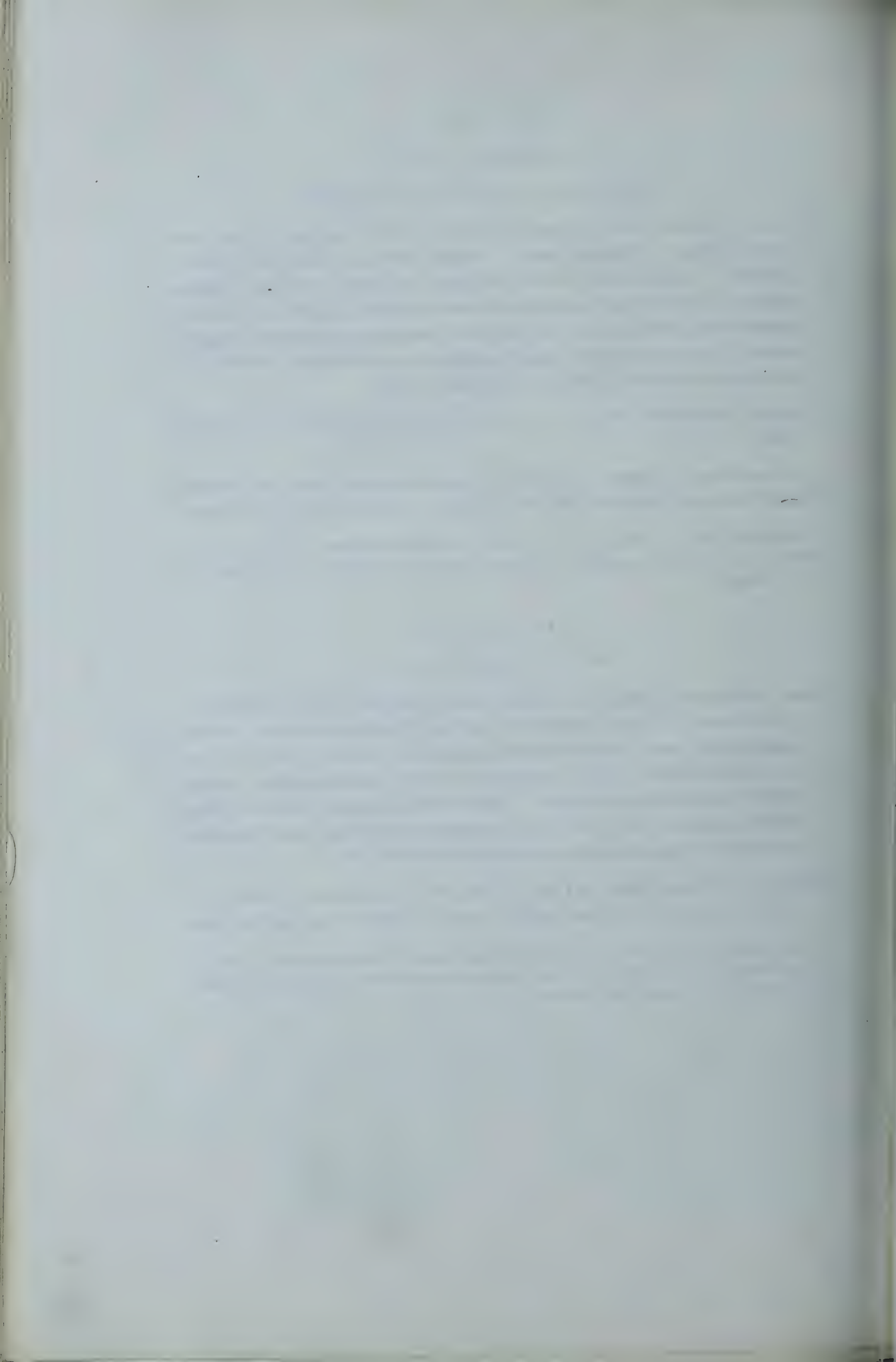
TAB. LXXX. B.

PLATYCERIUM. Desv.

Sorus superficialius, paginam inferiorem partis superioris frondis obtegens.—*Filices tropicæ. Rhizoma subrotundum parvum. Frondes fasciculatæ, coriacæ, dissimiles, aliæ sessiles cordato-orbiculatæ crenato-lobatæ crassæ steriles, aliæ stipitatæ, dichotomo-lobatæ in lobos fertiles subtus squamis pedicellatis peltatis stellato-multifidis capsulis intermixtis obtectæ. Venæ infernæ subramosæ, flabellatæ, crassæ, elevatæ costæformes, apice acuto libero desinentes, superne tenues ramosæ venulisque in maculas trapezoideas magnas elongatas anastomosantes. Presl.*

Platycerium biforme, Blume,—(TAB. LXXX. B.)—*Acrostichum biforme, Sw. Acrostichum grande, All. Cunn. in Herb. nostr. Platycerium coronarium, Desv.*

TAB. LXXX. B. Fig. 1. Small portion of the fertile frond of *Platycerium biforme*: nat. size; f. 2, 3. Sporangia; f. 4. Sporules; f. 5. Stellated stipitate hairs mixed with the sporangia: magnified; f. 6. Small portion of a sterile frond:—nat. size.





TAB. LXXXI. A.

ACROSTICHUM. *Presl.*

ACROSTICHI sp. *Linn. et Auct.*

Sorus superficiarius, totam paginam inferiorem frondis obtegens. *Sporangia* creberrima, pedicellata.—*Filices præcipue intratropicæ*. Frondes *sparsæ, coriaceæ, simplices aut pinnatæ, aut similes*, pinnis vel omnibus vel superioribus fertilibus, aut (in *A. Requiniano*) *dissimiles*, pinnis frondis fertilis angustioribus. Venæ *tenues, ramosissimæ, venulisque æquilatis, in maculas hexagonoideas latitudine longiores anastomosantes, subtus parum elevatæ*. *Sporangia sæpe squamis peltatis pedicellatis stellato-multifidis intermixta, primo aurea, demum fusca*. *Presl.*

Acrostichum aureum. *Linn.* (TAB. LXXXI. A.) *Wall. Cat. n. 31.*

Thus reduced, the Genus *Acrostichum* consists of few species, the Linnæan *A. aureum* being considered the type.

TAB. LXXXI. A.—*Fig. 1.* Under side of a fertile pinna: *nat. size*; *f. 2–6.* Sporangia and pedicellated scales or glands; *f. 7.* Sporules:—*magnified*; *f. 8.* Sterile pinna: *nat. size*; *f. 9.* Portion of a sterile pinna:—*magnified*.

TAB. LXXXI. B.

POECILOPTERIS. *Eschw. Presl.*

ACROSTICHI sp. *Linn. et Auct.* BOLBITIS. *Schott.*

Sorus superficiarius, paginam inferiorem frondis dissimilis obtegens. *Sporangia* creberrima, pedicellata.—*Filices Tropicæ*. Frondes *sparsæ, herbaceæ, simplices aut sæpius pinnatæ, dissimiles*, pinnis frondis sterilis præsertim terminali tum *elongata apice proliferis et radicantibus*, frondis fertilis paucioribus angustioribus integerrimis nunquam radicantibus. Venæ *pinnatæ*. Venulæ *prominulæ aut internæ in maculas irregulariter angulatas anastomosantes, maculis hinc inde venulam secundariam liberam apice globuloso-incrassatam emittentibus*. *Presl.*

Poecilopteris fraxinifolia. *Presl.* (TAB. LXXXI. B.) *Acrostichum fraxinifolium. Presl.* *A. serratifolium. Mert.* *Bolbitis serratifolia. Schott.*

Very nearly allied, as *Presl* observes, to his *Acrostichum*; but distinct in the reticulations of the veinlets.

TAB. LXXXI. B.—*Fig. 1.* Fertile pinnæ, seen from beneath: *nat. size*; *f. 2–4.* Sporangia, and *f. 5.* Sporules: *magnified*; *f. 6.* Sterile pinna: *nat. size*; *f. 7.* Portion of do.:—*magnified*.





TAB. LXXXII.

ONOCLEA. Linn.

CALYPTERIUM. Bernh.

Sori globosi, inferiori parti venæ dorso inserti, magni, valde approximati, demum confluentes. *Indusium* orbiculatum, concavum, reticulato-venosum. *Sporangia* creberrima, receptaculo conico inserta, annulo creberrime striato cincta.—*Filix Americanam borealem incolens*. *Rhizoma repens*. Frondes alternæ, herbacæ, dissimiles, steriles profunde pinnatifida lata sinuato-incisa, fertilis bipinnata, pinnulis sessilibus in globum baccæformem contractis. Venæ elevatæ, in fronde sterili dissimili ramosissimæ, venulis in maculas elongate et irregulariter hexagonoideas confluentibus, marginalibus libere desinentibus, in fronde fertili horizontales crassæ apice clavato libero terminatæ venula transversa maculam subquadratam efficiendi connexæ. Presl.

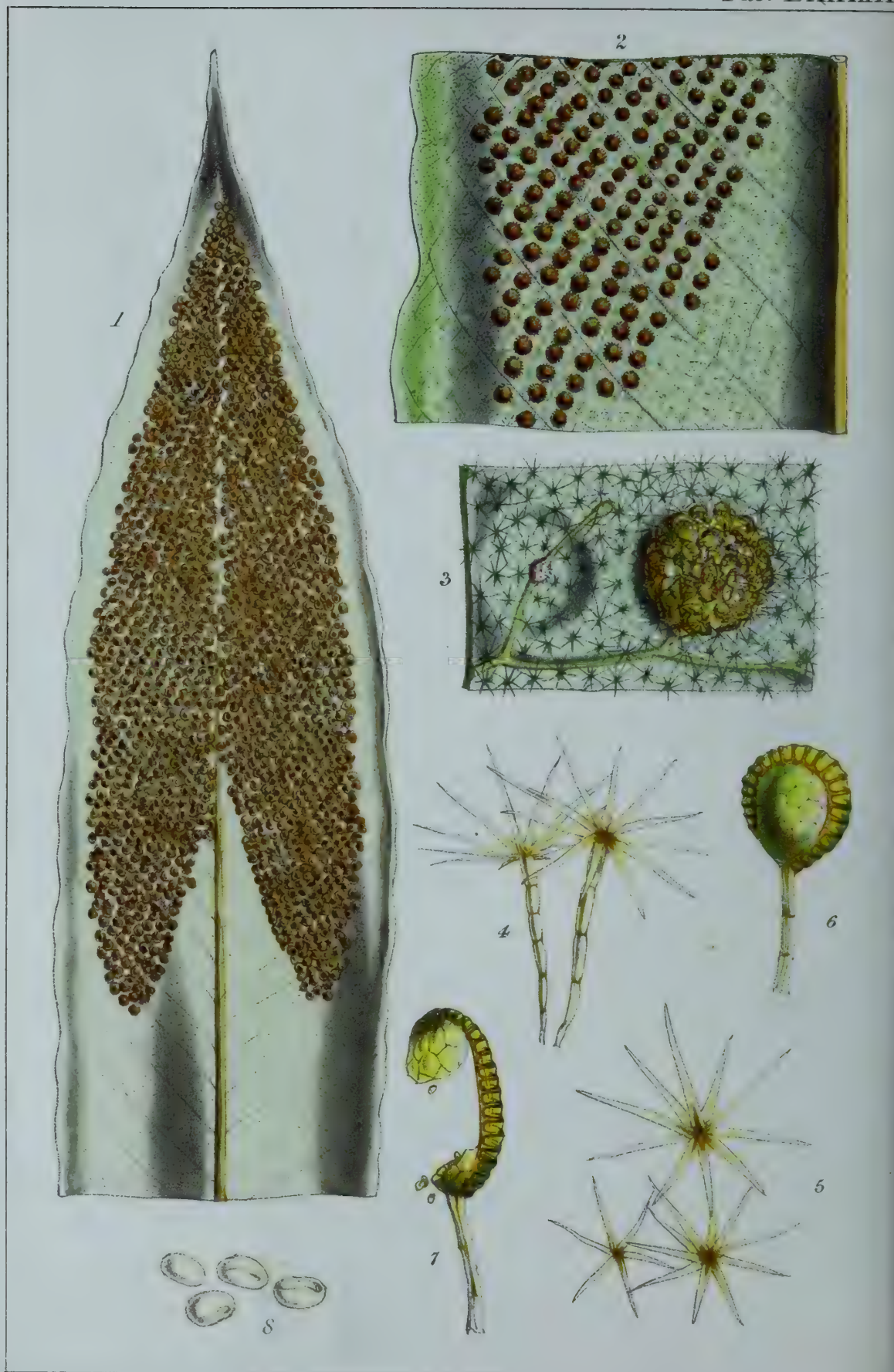
Onoclea sensibilis. Linn. (TAB. LXXXII.)

In our specimens which are in rather advanced age, it is extremely difficult to see the exact nature of the indusium, from the very rigid and coriaceous texture of the fertile pinnules, and from their singularly revoluted margins, which render it hardly possible to examine the fructification without injury to the indusium. To us it appears to be globose, membranous, bursting irregularly, but towards the apex of a segment of the frond, and containing a great quantity of compact sporangia. We can see little affinity with the *Cystopteridæ*,* a section in which Presl places it, nor do we observe the transverse veinlets described and figured by that author.

TAB. LXXXII. Fig. 1. Sterile Pinna of a frond: nat. size; f. 2. Portion of the same to show the venation: magnified; f. 3. Fertile spikes: nat. size; f. 4. Small portion of the same: magnified; f. 5. Upper view of a fertile pinnule: do.; f. 6. Under view of the same: do.; f. 7. Veinlet with single sorus; f. 8, 9. Sporangia; f. 10. Sporules:—magnified.

* Since the above was written, Mr J. Smith has given us the following extract from his unpublished paper on the Ferns, written in 1838:—This Genus (*Onoclea*) has hitherto been placed in affinity with *Blechnum* and *Woodwardia*, which no doubt has arisen from the membranaceous conniving margin being considered as an indusium, and from authors not having paid due regard to the apparent membranaceous scales which are found interposed between the confluent sori: which membrane I find is cucullate and attached to the sporangiferous receptacle, and therefore quite analogous to the interior attached lateral indusium of *Aspidiæ*. What further strengthens my opinion that *Onoclea* should be placed in *Aspidiæ* is, that the venation in the sterile fronds is similar to the Genus *Sagenia*; some of the contracted species of that Genus presenting much analogy, and requiring only a little more contraction to pass into *Onoclea*. Thus *Onoclea* presents the same affinity with *Aspidium* as *Struthiopteris* does with *Polypodium*.—J. Sm.







TAB. LXXXIII.

NIPHOBOLUS. *Kaulf. Presl.*

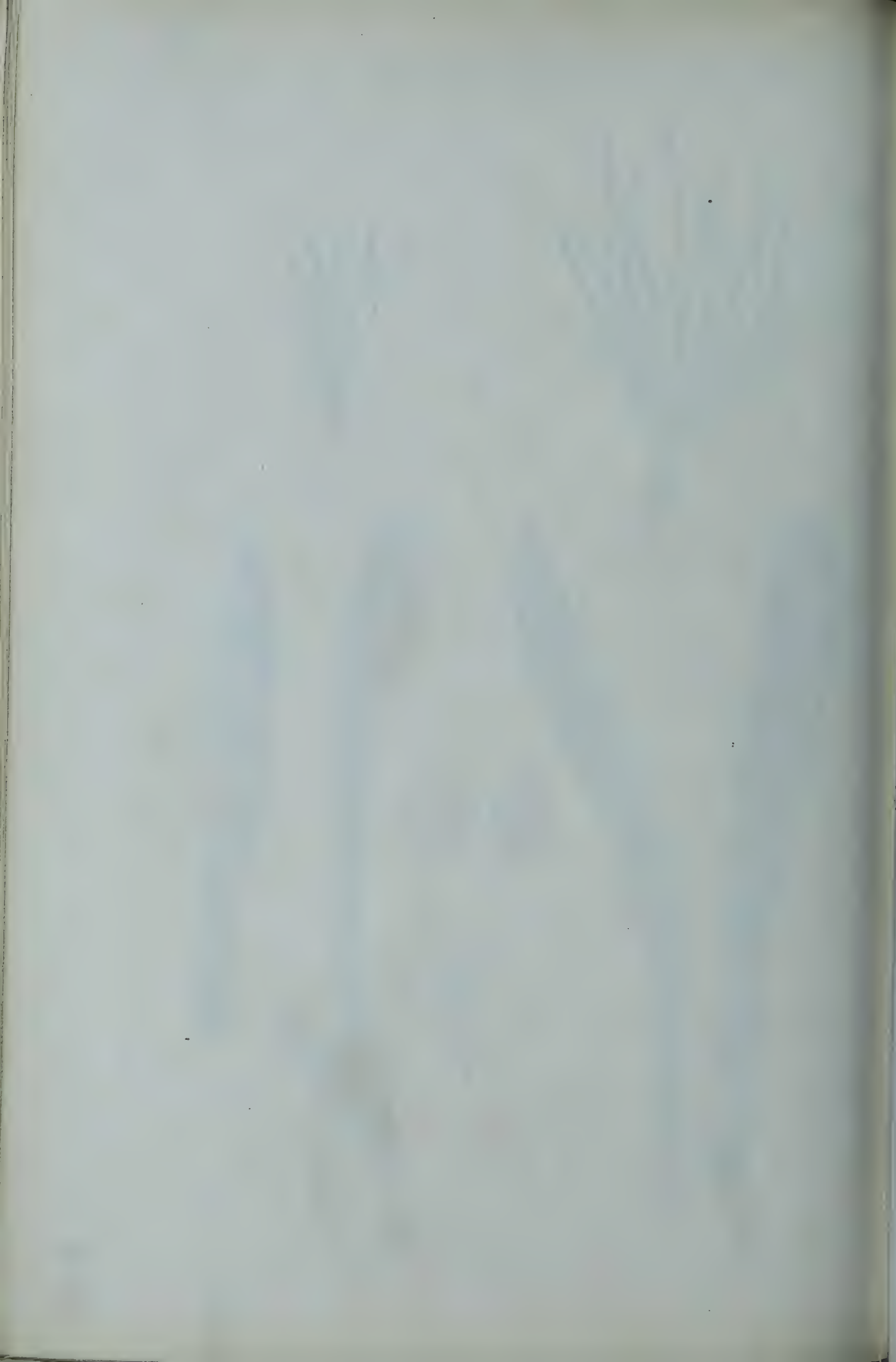
Sori multiseriales densissime approximati, superiorem frondis partem incrassatam occupantes, sæpe immersi, globosi, aut annulares.—*Filices pleræque Indicæ tropicæ. Rhizoma repens. Frondes sparsæ, coriaceæ, simplices, steriles sæpe difformes, breviores latiores et brevius stipitatae; pagina frondium utraque præsertim inferior squamis orbiculatis peltatis stellato-ciliatis vel pilis stellatis vel conspersa est; sori juvenes capsulas pilis squamulæformibus stellatis intermixtas et apparenter obtectas habent, adulti sori tamen emingunt et his pilis cincti sunt. Venæ venulæque in plurimis speciebus invisibiles; in N. costato venæ costulæformes elevatae, ramosissimæ, venulæ tenuissimæ, internæ, maculas rhomboideas transversas efficientes, venulæ secundariæ aut venulas primarias transversim conjungentes aut liberæ, apice globulosæ, rectæ aut hamato-incurvæ, simplices aut furcatae. Presl.*

Niphobolus Penangiana. Hook. (TAB. LXXXIII.) Ic. Plant. t. 303.

The above is Presl's definition of the Genus *Niphobolus*: but certainly in most of the species, the venation is quite obsolete, and, in that which we have here represented, it is considerably different from what is seen in Presl's figure, and accords with *Campyloneurum* (TAB. LXXI.); but the habit is quite that of *Niphobolus*. Eighteen species are enumerated.

TAB. LXXXIII.—*Fig. 1. Portion of a fertile frond of N. Penangianus, Hook.: nat. size; f. 2. Smaller portion of the same; f. 3. lesser portion, with one sorus removed; f. 4. Pedicellate stellated hair from among the sporangia; f. 5. Sessile stellated hair from the frond; f. 6, 7. Sporangia; f. 8. Sporules:—magnified.*





TAB. LXXXIV.

MONOGRAMME. *Schk. Presl.*

GRAMMITIDIS sp. *Sw. et Auct.* PTERIDIS sp. *Poir.* MONOGRAMME et COCHLID-
DIUM. *Kaulf. et Auct.*

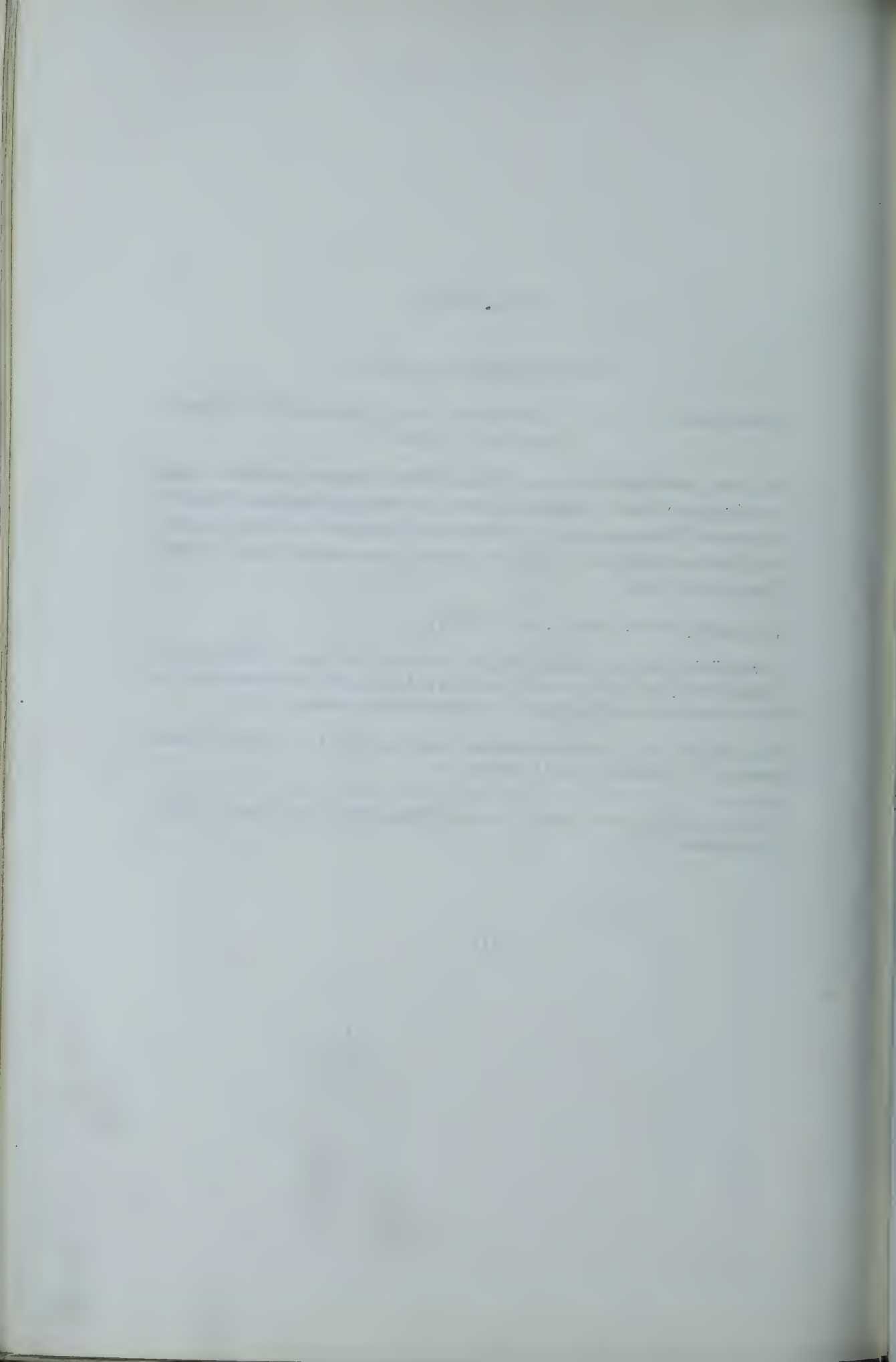
Sorus dorso partis superioris costæ insidens, linearis, elongatus, continuus, frondis superiore parte demum complicata velatus. *Sporangia* pedicellata.—*Filices intratropicæ.* *Rhizoma repens.* *Fronde*s sparsæ, herbacæ, tenerrimæ, angustissime lineares, integerrimæ aut furcatæ, præter costam mediam tenuem aveniæ. *Venæ nullæ.* *Presl.*

Monogramme furcata. *Desv.* (TAB. LXXXIV.)

A very distinct and well marked Genus, yet in habit, at first sight, so like the Genus *Pleurogramme* (TAB. LXXII. A. and TAB. LXXV. A.*) as to be easily mistaken for it, unless one looks at the old fructification, or observes the entire absence of veins.

TAB. LXXXIV.—A. B. Plants of *Monogramme furcata*: nat. size; f. 1, 2. Portions of fronds: magnified; f. 3—5. *Sporangia*: do.; f. 6. *Sporules*: do.

* In the description at TAB. LXXV. A. the word *Microgramme* is twice printed by mistake for *Monogramme*.







TAB. LXXXV.

GYMNOPTERIS. Presl.

GYMNOPTERIDIS sp. *Bernh.* ACROSTICHI sp. *Linn. et Auct.* HYMENOLEPIS et
LEPTOCHILUS. *Kaulf.*

Sorus superficialis, paginam inferiorem frondis partis superioris dissimilis aut frondis dissimilis obtegens. Sporangia pedicellata.—Filices intratropicæ. Rhizoma repens. Frondes alternæ, coriaceæ aut herbaceæ, simplices aut pinnatæ. Venæ ramosissimæ, prominulæ aut internæ, tenues. Venulæ primariæ in maculas hexagonideas subrotundas aut irregulariter parallelogrammas lateribus curvatis anastomosantes, secundariæ in maculas minores hexagonideas aut parallelogrammas confluentes aut liberæ apice globoso incrassatæ, simplices aut furcatæ, rectæ, aut hamatæ. Presl.

Gymnopteris aliena. Presl. (TAB. LXXXV.) Acrostichum alienum. Sw.—A. cladorhizans. Spreng.

This genus, as defined by Presl, is by that author divided into 2 groups; § I. GYMNOPTERIS. Frons apice fertilis aut frondes dissimiles. Venæ internæ aut prominulæ. Venulæ in maculas hexagonideas anastomosantes. To this section belongs our *G. aliena*.—§ II. ANAPAUSIA. Frondes dissimiles, coriaceæ aut herbaceæ. Venæ internæ aut elevatæ costæformes. Venulæ in maculas transversim et irregulariter parallelogrammas lateribus curvatis anastomosantes. This is a much smaller section, and includes *G. nicotianæfolia*, and 3 allied species.

TAB. LXXXV.—*Fig. 1. Sterile pinna: nat. size; f. 2. Portion of the same: magnified; f. 3. Fertile pinna, upper side: nat. size; f. 4. Fertile pinnæ, seen from beneath: nat. size; f. 5. Portion of the same, with many of the sporangia removed; f. 6—9. Sporangia; f. 10. Sporules:—magnified.*



TAB. LXXXVI.

TMESIPTERIS. *Bernh.*

PSILOTI sp. *Br. Endlich.*

Sporangia sessilia uniformia oblonga biloba, lobis acutis patentibus, ad basin foliorum furcaturæ sita, solitaria, coriacea, bilocularia, rima verticali dehiscentia, loculis bivalvibus.—*Planta Australasica et ut videtur Californica, parasitica. Caulis pendens, simplex, angulatus, foliosus. Folia alterna, (sporangifera geminata), oblonga, verticalia, plana, costata, enervia, obtusa, costa excurrente mucronata sterilia simplicia basi decurrentia, fertilia breviter petiolata profunde bipartita. Sporangia coriacea, fere lignosa, madefacta cellulosa. Sporulæ copiosæ, minutæ, uniformes, subreniformes, pellucidæ.*

Tmesipteris truncata. Bernh. (TAB. LXXXVI.) Psilotum truncatum. Br.

A very remarkable plant of the small Order of *Lycopodiaceæ*, nearly allied to *Psilotum*, with which Brown and Endlicher unite it. It differs in its simple leafy stems, with very distinct leaves, large in proportion to the size of the plant, and its 2-celled sporangia.

TAB. LXXXVI.—*Fig. 1. Portion of a plant of Tm. truncata: nat. size; f. 2. Smaller portion of the same: magnified; f. 3. Fertile bipartite leaf with a sporangium in its axil; f. 4. Sporangium seen from beneath; f. 5. The same seen from above, burst, and exposing the sporules to view; f. 6. Sporules:—magnified.*

CONTENTS

PREFACE

CHAPTER I

The first chapter of the book discusses the importance of understanding the basic principles of the subject. It covers the fundamental concepts and provides a clear overview of the topics to be explored in the subsequent chapters. The author emphasizes the need for a solid foundation in these principles before moving on to more advanced topics.

The second chapter delves into the historical development of the field, tracing the roots of the theory and its evolution over time. It highlights key milestones and the contributions of various researchers, providing context for the current state of the field.

The third chapter focuses on the practical applications of the theory, illustrating how the concepts discussed in the previous chapters can be used to solve real-world problems. It includes several examples and case studies to demonstrate the effectiveness of the theory in practice.

The fourth chapter explores the relationship between the theory and other related fields, showing how the concepts discussed in this book can be applied in a broader context. It also discusses the challenges and limitations of the theory and suggests areas for future research.

The fifth and final chapter provides a summary of the key findings of the book and offers some concluding thoughts on the importance of the subject. It also includes a list of references for further reading and a list of appendices containing additional information.



TAB. LXXXVII.

PSILOTUM. Sw.

PSILOTI sp. Br. Endlich. BERNHARDIA et HOFFMANNIA. Willd. TRISTECA.
Palis. LYCOPODIUM. Linn.

Sporangia sessilia uniformia globosa triloba, lobis obtusis ad basin foliorum minutissimorum furcaturæ sita, solitaria, coriacea, trilocularia, trivalvia, loculicido-dehiscencia.—Planta parasitica subtropica. Caulis pendens v. suberecta angulata, vel plana, inferne nuda indivisa, superne dichotomo-ramosissima, ramis angulatis acutis minute foliosis, sporangiferis. Folia alterna (omnia? sporangifera), profunde bipartita, sporangiis pluries minora, laciniis subulatis. Sporulæ copiosæ reniformes hyalinæ utrinque depressæ.

Psilotum triquetrum. Sw. (TAB. LXXXVI.) *Lycopodium nudum*. Linn.

There are few better examples of a dichotomous ramification, than that which is afforded by the present plant. The ultimate branches especially are loaded with fruit, (sporangia,) which are very large in proportion to the branches which bear them. Each is subtended by a minute bipartite sessile leaf.

TAB. LXXXVII.—Fig. 1. Upper part of a plant of *Psilotum triquetrum* with sporangia; f. 2. Smaller portion of the same: magnified; f. 3. Single branch of do.; f. 4, 5, 6. Sporangia in different points of view; f. 7. Sporules:—magnified.

CHAPTER I

THE

THE first part of the work is devoted to a general survey of the subject, and to a discussion of the principles which govern the process of the mind. The second part is devoted to a detailed examination of the various faculties of the mind, and to a discussion of the laws which govern their operation. The third part is devoted to a discussion of the various theories of the mind, and to a comparison of their merits and demerits. The fourth part is devoted to a discussion of the various applications of the principles of the mind, and to a comparison of their merits and demerits. The fifth part is devoted to a discussion of the various methods of the mind, and to a comparison of their merits and demerits. The sixth part is devoted to a discussion of the various results of the mind, and to a comparison of their merits and demerits. The seventh part is devoted to a discussion of the various causes of the mind, and to a comparison of their merits and demerits. The eighth part is devoted to a discussion of the various effects of the mind, and to a comparison of their merits and demerits. The ninth part is devoted to a discussion of the various uses of the mind, and to a comparison of their merits and demerits. The tenth part is devoted to a discussion of the various abuses of the mind, and to a comparison of their merits and demerits. The eleventh part is devoted to a discussion of the various remedies of the mind, and to a comparison of their merits and demerits. The twelfth part is devoted to a discussion of the various cures of the mind, and to a comparison of their merits and demerits. The thirteenth part is devoted to a discussion of the various preventives of the mind, and to a comparison of their merits and demerits. The fourteenth part is devoted to a discussion of the various cures of the mind, and to a comparison of their merits and demerits. The fifteenth part is devoted to a discussion of the various preventives of the mind, and to a comparison of their merits and demerits. The sixteenth part is devoted to a discussion of the various cures of the mind, and to a comparison of their merits and demerits. The seventeenth part is devoted to a discussion of the various preventives of the mind, and to a comparison of their merits and demerits. The eighteenth part is devoted to a discussion of the various cures of the mind, and to a comparison of their merits and demerits. The nineteenth part is devoted to a discussion of the various preventives of the mind, and to a comparison of their merits and demerits. The twentieth part is devoted to a discussion of the various cures of the mind, and to a comparison of their merits and demerits.





TAB. LXXXVIII.

LYCOPODIUM. *Linn.*

§ SELAGO.

Sporangia axillaria sessilia unilocularia uniformia vel biformia: alia bivalvia subreniformia, sporulis minutis fariniferis copiosissimis repleta:—alia tri-quadriloba, tri-quadrivalvia, sporulis? paucis magnis globosis repleta.—Plantæ foliosæ, simplices vel varie ramosæ, totam fere orbem utriusque hemispheriæ habitantes. Caules subsimplices vel varie ramosi, plerumque duri, breves vel longissimi, erecti, vel pendentes, sæpe repentes, nonnunquam parasitici. Folia subcoriacea, sessilia, sæpe decurrentia, nunc undique inserta et omnia similia, nunc tristicha vel tetrasticha, lateralibus tunc majora, inferiora vel superiora sæpe stipuliformia. Fructificatio sæpe spicata.

Lycopodium taxifolium. Sw. (TAB. LXXXVIII.)

The *Lycopodium* we have here represented belongs to that group or section to which the name of *Selago* has been given. It consists of many species of which our well known *Lycopodium Selago* may be considered the type, and characterized by having the leaves polystichous, uniform, and the capsules also uniform, and situated in the axils of the leaves. It often insensibly passes into that group or section (*Lepidotis*. Palis. Endlich.) which has spicate fructifications.

TAB. LXXXVIII.—*Fig. 1.* Portion of *Lycopodium taxifolium*: *nat. size*; *f. 2.* Smaller portion of the same: *magnified*; *f. 3.* Back view of a sporangiferous leaf; *f. 4.* Front view of the same; *f. 5.* Sporangium dehiscing; *f. 6.* Sporules:—*magnified*.

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TAB. LXXXIX.

HEWARDIA. *J. Smith.*

Indusium marginale, continuum, subtus venosum et sporangiferum; demum replicatum, sorum marginale continuum efformans. *Venæ* superficiales, reticulatæ, venulæ anastomosantes, areolis elongatis.—*Filix tropico-Americana*. Frons $1\frac{1}{2}$ pedalis ad bipedalem? stipitata, dichotoma, stipite ebeneo. Pinnæ pinnatæ; pinnae membranaceæ, ovato-lanceolatæ basi obliquæ, 4-5 uncias longæ, 2 uncias latæ, alternæ, petiolatæ, persistentes (non articulatæ nec deciduæ ut in *Adianto*); costa versus apicem pinnae obsoleta *J. Sm.*

Hewardia adiantoides. *J. Sm. in Hook. Journ. of Bot. v. 3. p. 432. tab. 16, 17.*
(TAB. LXXXIX.)

A Guiana Fern discovered by Martin, and which Mr J. Smith has dedicated to his friend Mr Robert Heward, the friend of the lamented Allan Cunningham, and the inheritor of his collections. "In habit," Mr Smith says, "it approaches the largest forms of *Adiantum* and *Schizoloma*, agreeing with the first, in the sporangia being produced on the indusium, and with the latter by the reticulated venation, so that *Hewardia* bears the same relation to *Adiantum* that *Schizoloma* does to *Lindsæa*. The reticulated veins of *Hewardia* and *Schizoloma* readily distinguish these two Genera from *Adiantum* and *Lindsæa*, in which the veins are all free."

TAB. LXXXIX.—*Fig. 1.* Small portion of a fertile frond: *nat. size*; *f. 2.* Portion of a pinna; *f. 3.* Indusium and sorus; *f. 4—6.* Sporangia; *f. 7.* Sporules:—*magnified.*

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TAB. XC.

ANEMIA. Sw.

ORALTHOPTERIS. Bernh.

Sporangia ovata, vasculoso-reticulata, in spicas unilaterales dense paniculatas disposita, sessilia, biseriata, vertice complete annulata, extrorsum dehiscentia. *Indusium* nullum. *Sporulæ* obtusæ, triangulares, echinatæ (an semper ?)—Filices pleræque tropicæ et præcipue Americanæ, unica species ex Africa Australi. Rhizoma sæpissime repens. Frondes stipitatæ, ternatæ, pinnatæ decompositæve. Venæ pinnatæ, (in *A. Gardneri* flabellatæ), venulæ obliquæ bis terve furcatæ, apicibus vix ad marginem attingentibus, clavulatis. Pedunculi geminati e basi frondis, spicis decompositis.

Anemia Mandioccana. Raddi. (TAB. XC.)

Of this beautiful Genus the greater number of species are natives of Brazil. The one here figured, indeed, we received from Trinidad : but it appears to us to be a variety of Raddi's *A. Mandioccana*. The structure and insertion of the sporangia are exactly similar to those of *Schizæa* (TAB. XIX.) and these two genera, together with *Lygodium* and *Mohria*, Martius, and, following him, Endlicher, have placed in a group or Order distinct from *Osmundaceæ*, in which the sporangia have only an incomplete dorsal annulus. Endlicher and others look upon the sporangia as produced upon a changed and contracted portion of the frond, but the long geminate peduncles, and the very much divided segments even in those species with simply pinnated fronds, and the point of origin of these peduncles, hardly warrant such a conclusion; though it must be acknowledged that the same author takes a similar view of the fructification in *Ophioglossum*.

TAB. XC.—*Fig. 1.* Frond and fructification of *Anemia Mandioccana* : nat. size; *f. 2.* Single pinna; *f. 3.* Portion of the rachis of the panicle, anterior view; *f. 4.* posterior view of the same; *f. 5, 6.* Sporangia; *f. 7.* Sporules :—magnified.





TAB. XCI.

AGLAOMORPHA. Schott. J. Sm.

PSYGMIMUM. Presl.

Sori rotundati, depressi, nudi, in singulo lobo segmentorum contractorum solitarii.—

Frondes sessiles, rigidae, bi-tripediales, basi pinnatifidae, steriles, superne pinnatae et fertiles. Pinnæ sessiles, cum rachi articulatae, 10 uncias longæ, sinuato-pinnatifidae; lobulis rotundatis, omnibus unisoris. Venæ, segmentorum sterilium, costæformes; venulæ compositæ, anastomosantes, areolas subæquales quadrangulares formantes, lateribus venas varie divergentes gerentes. Segmenta fertilia terminalia, contracta, sinuato-pinnatifida: venulæ sporangiferae, confluentes, obsoletæ, in singulo lobo soriferae. J. Sm.

Aglaomorpha Meyeniana. Schott. Gen. Fil. TAB. XIX.—Psychmium elegans. Presl.

HAB. Luzon. (Cuming, n. 49.)

Scarcely distinct as a Genus, as Mr Smith well observes, from *Drynaria*, Bory. The fertile segments are indeed singularly contracted and changed, and the venules in them, besides being very obscure, are few in each lobe; nor do I find the sori placed on the confluence of several venules as described by Smith, but of two at most, as described by Schott, and sometimes even of one, as described by Presl.

TAB. XCI. *Fig. 1. Sterile segment; nat. size: f. 2, 3. portions of the same magnified to show the venation: f. 4, 6, Fertile segments; nat. size: f. 5, 7. Portions of the same; magnified: f. 8, 9, 10. Sporangia; magnified: f. 11. Sporules; do.*





TAB. XCII.

PHOTINOPTERIS. *J. Sm.*

Sori amorphi, nudi, dorso pinnarum superiorum contractarum totam paginam tegentes.—Frondes coriaceæ, glabræ, pinnatæ, 2-3 pedales, superne contractæ, fertiles. Pinnæ cum rachi articulatae. Petiolus brevis, basi verticaliter oblongus et inferne in lobulo obtuso dilatatus. Pinnæ steriles elliptico-lanceolatae, apice attenuato-falcatae, basi subobliquæ, 6-8 uncias longæ, 3 uncias latæ, margine integerrimo, incrassato, leniter revoluti. Pinnæ fertiles lineares, 8 uncias ad pedalem longæ, subtus undique sporangiferae. Venæ costæformes, venulis transversis unitæ, areolas quadrangulares formantes, venulas compositas anastomosantes, varie divergentes, liberas apice clavatas includentes. *J. Sm.*

Photinopteris Horsfieldii. J. Sm.—*Acrostichum rigidum. Wall.*

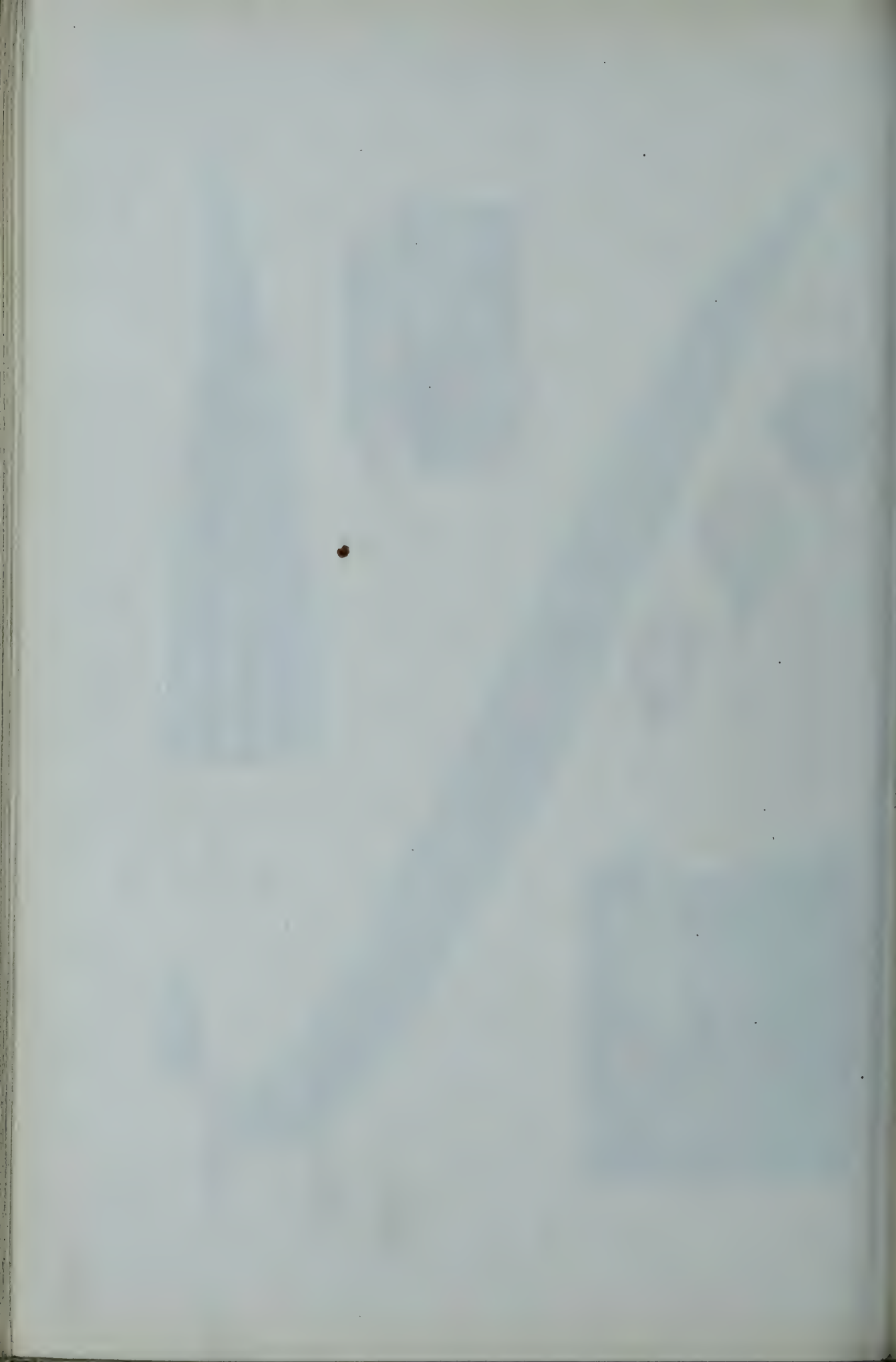
HAB. Singapore. *Dr Wallich.* Java. *Dr Horsfield.* Luzon. *Cuming.* (n. 362.)

Mr Smith mentions two species of this Genus; the present, and *P. simplex* (Cuming, n. 363); but he suspects that the latter is only an imperfect form of *P. Horsfieldii*. He places it near *Gymnopteris* (TAB. NOSTR. LXXXV.), from which it differs in habit, and in the articulation of the pinnæ with the rachis.—Seen under a high magnifying power, the surface of the sterile pinnæ seems studded with minute pores (*f.* 3, 4).

TAB. XCII. *Fig.* 1. Sterile pinnæ; *nat. size*: *f.* 2, 3. Portions of the same; *magnified*, to show the venation: *f.* 4. Minute pore of the frond; *do.*: *f.* 5. Sterile pinnæ; *nat. size*: *f.* 6, 7. Back and front view of portions of the same; *magnified*: *f.* 8, 9. Sporangia; *do.*: *f.* 10. Sporules; *do.*: *f.* 11. Clavate hairs or abortive sporangia; *do.*







TAB. XCIII.

SALPICHLÆNA. *J. Sm.*

BLECHNI SP. *Kaulf.*

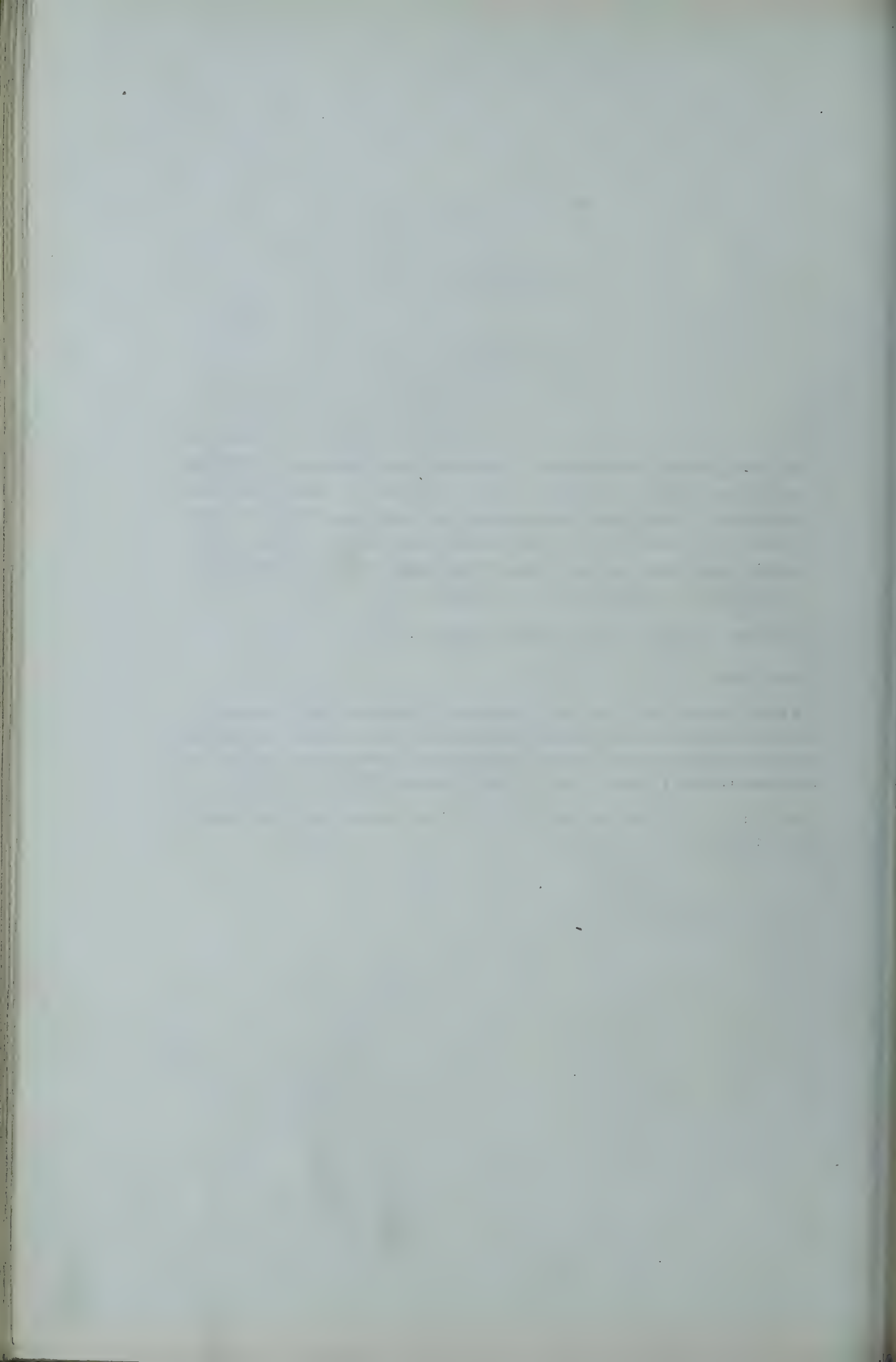
Sorus linearis, elongatus, costalis. *Indusium* conforme, involutum, fere cylindraceum, basi sporangiferum, intus dehiscens.—Fronde*s* flexuosæ, bipinnatæ, petiolis scandentes; pinnulæ 4-8, suboppositæ, remotæ, membranaceæ, lineari-lanceolatæ, acuminatæ, 4-6 uncias longæ, margine plano, vel repando-undulato, nunc leniter revoluti et subindusiiformi: *indusium* verum inflatum, fuscum. Venæ furcatæ; venulis rectis, versus apicem, et iterum basin versus vena transversali unitis, sorum linearem continuum costalem formante. *J. Sm.*

Salpichlæna volubilis. J. Sm.—*Blechnum volubile. Kaulf.*

HAB. Brazil.

“From *Blechnum*, this is not only distinguished by its climbing habit, but also by the venules being combined by a transverse slightly intramarginal vein, and by its conspicuous cylindrical tube-like indusium, bearing a portion of the sporangia along its lengthened attachment or base.” *J. Sm.*—It is said to climb to the tops of lofty trees in Brazil.

TAB. XCIII. Fig. 1. Pinna; nat. size: f. 2, 3, 4. Portions of the same, more or less magnified: f. 5, 6, 7. Sporangia; do.: f. 8. Sporules; do.







TAB. XCIV.

STENOSEMIA. *Presl. J. Sm.*

Sori nudi, medio vel apice venularum siti, rotundati vel lineares, distincti, vel paria confluentes, v. subamorphi.—*Fronde 1-2 pedales, bipinnatifidæ. Stipes ebeneus Laciniæ obtusæ, integræ vel inferiores sublaciniatæ; pinnarum axis sæpe gemmifera. Fronde fertiles sæpe imperfecti evolutæ, spicas rachiformes sporangiferas formantes. Venæ costæformes, pinnatæ. Venulæ simplices aut furcatæ, paribus 2 inferioribus oppositis eorumque ramulis angulariter anastomosantibus, reliquis liberis: frondis fertis venulæ plerumque minus anastomosantes, vel omnes liberæ. J. Sm.*

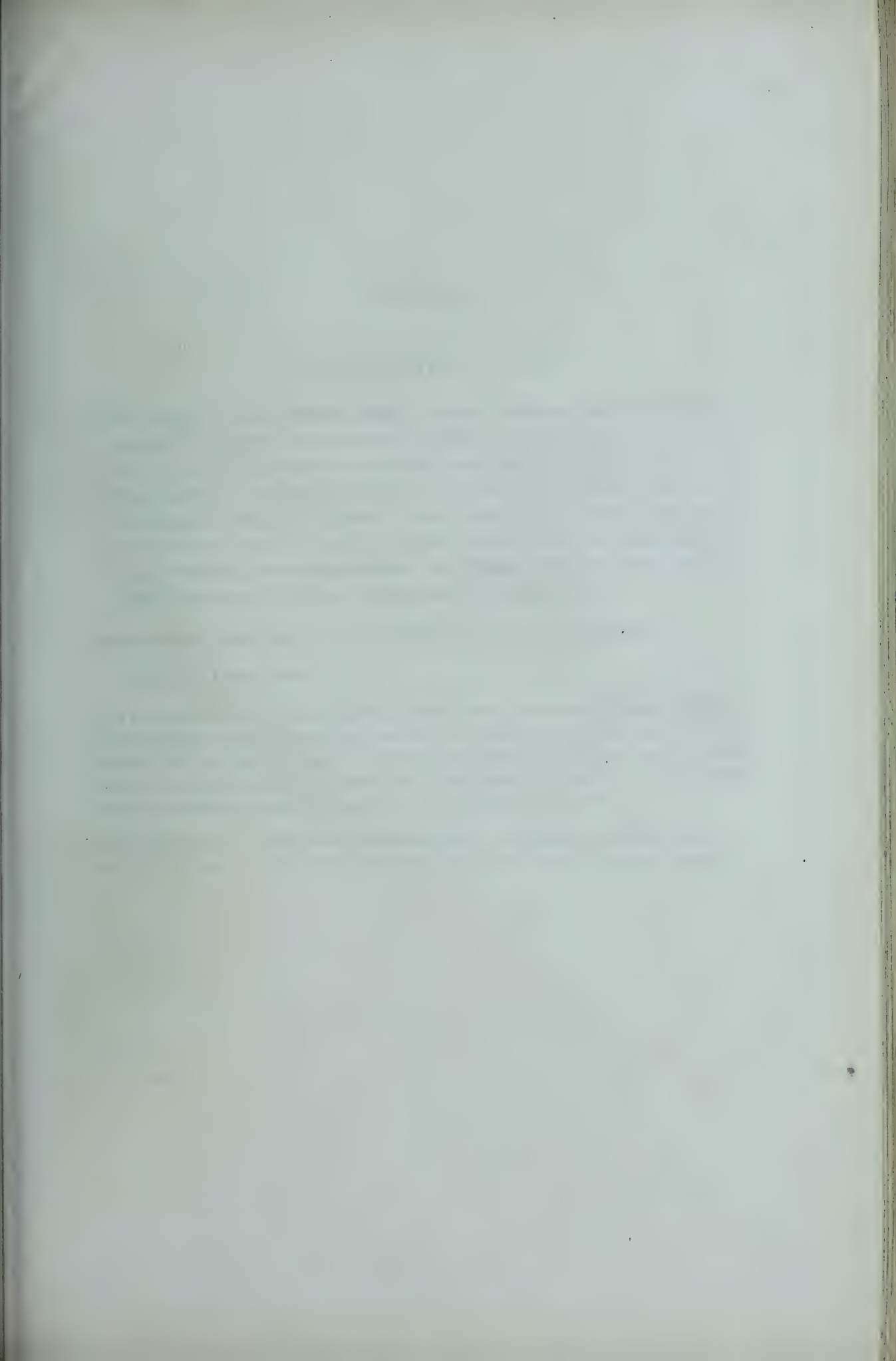
Stenosemia aurita. Presl.—*Polybotrya aurita. Blume, Fl. Javan. v. 3. p. 1.*—*Acrostichum auritum. Sw.*—*Rumph. Amb. v. 6, p. 35.*

HAB. Amboyna. Rumphius. Java. Blume. Philippine Islands. Cuming (n. 295, 302, 321, 341).

Mr J. Smith has first accurately noticed the nature of the venation and of the sori in this Fern. "In some cases the venation of the fertile frond is free, and bears round sori, therefore not differing from those of *Polypodium*; but it is usual for the lower venules to anastomose (as in the sterile frond), and produce round or oblong sori, presenting some affinity with *Meniscium* and *Goniopteris*." *J. Sm.*

TAB. XCIV. *Fig. 1. Sterile pinna; nat. size: f. 2. Portion of the same; magnified: f. 3. Fertile pinna; nat. size, with linear sori: f. 4. Portion of the same; magnified: f. 5. Portion of a pinna with rounded sori, and f. 6, single sorus; magnified: f. 7, 8. Sporangia, and f. 9. Sporules; magnified.*







TAB. XCV.

DRYOSTACHYUM. J. Sm.

Sori oblongi s. quadrangulares, nudi, in pinnas terminales contractas biseriatim dispositi, approximati, subconfluentes. Frondes sessiles, rigidae, 1-2 pedales, simplices, vel basi plerumque pinnatifidae et steriles, supra pinnatae, pinnis fertilibus sessilibus, cum rachi articulatis, 6-10 uncias longis, reticulatis, areolis sporangiferis glabris vel pilosis. Venae, segmentis sterilibus, costaeformes; venulae compositae, anastomosantes, areolas subquadrangulares formantes, lateribus ramuliferis, ramulis ultimis liberis varie divergentibus: Pinnarum fertilium venulae confluentes, intra venas costaeformes sporangiferae. J. Sm.

Dryostachyum splendens. J. Sm. in Hook. Journ. of Bot., 3. p. 399.

HAB. Luzon. Cuming (n. 87).

Two other species, *D. caudatum*, (Polypodium, Reinw.) a native of the island of Celebes, and *D. pilosum*, J. Sm. a native, like the one here represented, of Luzon, belong to this Genus. All grow on trees, and, as stated by the author of the Genus, agree in habit with *Drymaria quercifolia* and *coronans*, but differ by the fertile portion of their fronds being contracted into rachiform segments, bearing remarkably large sori.

TAB. XCV.—Fig. 1. Portion of the frond; magnified: f. 2, 3. Sterile and fertile segments; nat. size: f. 4. Portion of a fertile segment; magnified: f. 5, 6. Sporangia: f. 7. Sporules; magnified.





TAB. XCVI.

CYSTODIUM. *J. Sm.*

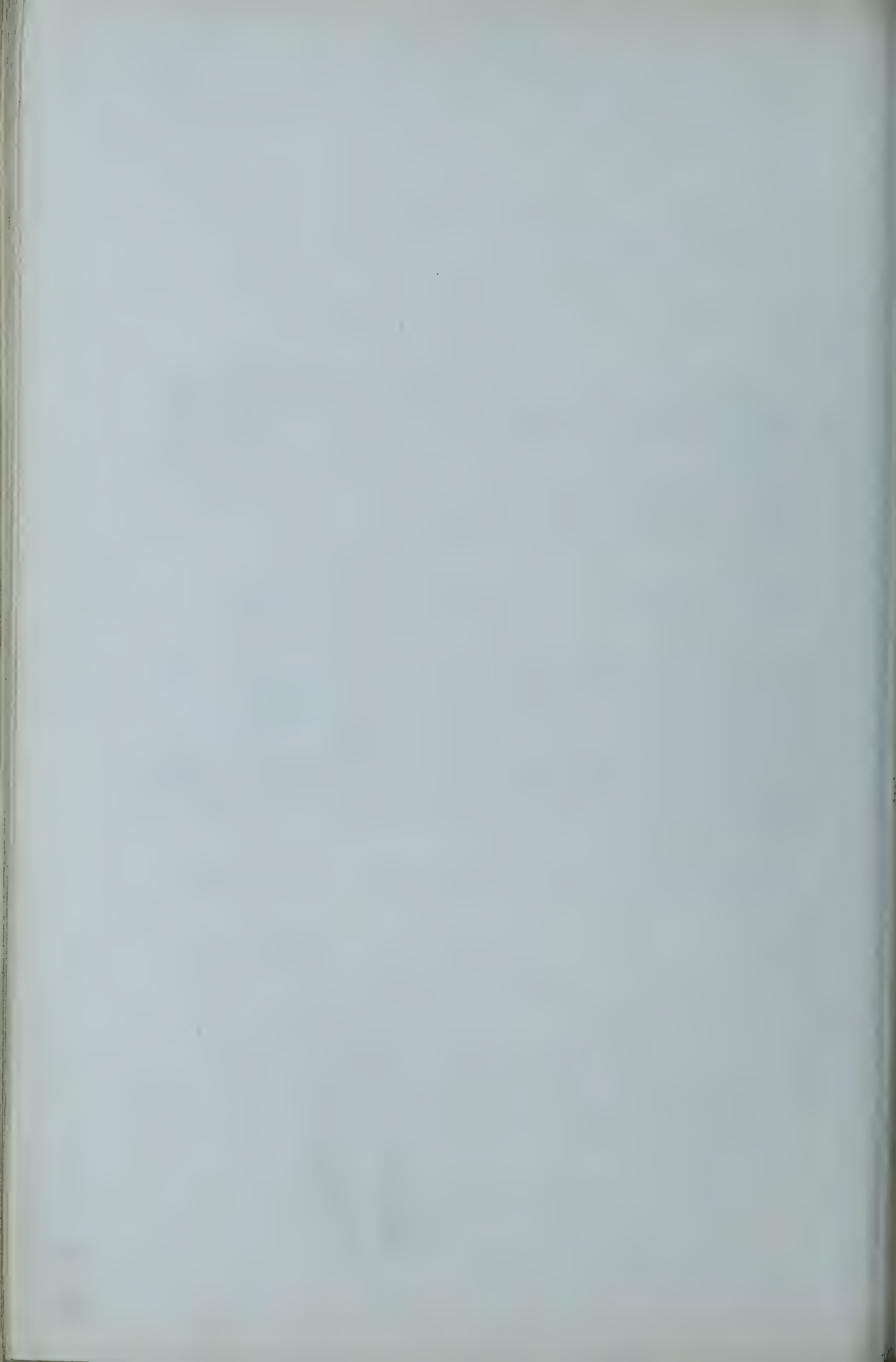
DICKSONIÆ sp. *Sm.*

Sori marginales, exserti, globosi, venas terminantes. *Indusium* duplex: *interius* (verum) subreniforme, parvum, planiusculum; *ext.* (accessorium) concavo-cucullatum, *interius* includens. Frondes *bipinnatæ*; *pinnæ lanceolatæ, pedales*; *pin-nulis numerosis, lineari-lanceolatis acuminatis, subfalcatis, sesquipollicem ad duas uncias longis, semipollicem latis, basi truncatis, brevissime petiolatis, marginibus æqualiter dentatis, dentibus subreflexis, soriferis.* Venulæ simplices vel rarius furcatæ, rectæ, parallelæ, apicibus liberis soriferis. *J. Sm.*

Cystodium sorbifolium. J. Sm. in Hook. Journ. of Bot. ined. Dicksonia sorbifolia. Sm. in Rees' Cycl.

"This Genus is founded upon a very rare Fern, a native of the Moluccas, but well described by Sir Jas. E. Smith in Rees' Cyclopædia: yet it does not appear to be taken up by any succeeding author. In its general character it comes nearest to *Deparia* (Hook. et Grev. TAB. NOSTR. XLIV. B), differing however entirely in habit and in the cowl-like form of the fertile teeth, which, being at equal distances and projecting beyond the margin, give to the Fern a striking and peculiar appearance. But it is necessary to observe that although the peculiar habit naturally induces us to view *Cystodium* as distinct, yet it is difficult to point out a character whereby it may be distinguished from other *Dicksoniæ*." *J. Sm.*

TAB. XCVI.—*Fig. 1.* Portion of a pinna; *nat. size*: *f. 2.* pinnule: *f. 3.* Portion of do.: *f. 4, 5.* hairs from the costa and veins: *f. 6.* *Sori*: *f. 7, 8, 9.* Sporangia: *f. 10.* Sporules; *magnified.*







TAB. XCVII.

PLEOCNEMIA. *Presl.*

POLYPODII sp. *Gaud.*

Pleocnemia Leuceana. *Presl.*—*Hook. supra* TAB. LXX. *J. Sm. in Hook. Journ. of Bot.* v. 3, p. 411.

Perfect specimens of this Plant in Mr Cuming's collection (*nos.* 33, 34, 107, 289,) have enabled me to correct a very important error into which both *Presl* and myself, as well as *Gaudichaud*, have fallen, in representing the sori as destitute of an indusium, whereas it is furnished with a reniform one. It will be seen by our figures that the veins of the sterile laciniae anastomose a good deal more than the fertile ones, owing to the greater development of frond.

TAB. XCVII.—*Fig.* 1. Sterile pinna of *Pleocnemia Leuceana*; *nat. size*: *f.* 2. Portion of the same; *magnified*: *f.* 3. Fertile pinna; *nat. size*: *f.* 4. Fertile lacinia; *magnified*: *f.* 5. Portion of the same more highly *magnified*: *f.* 6, 7. Sporangia: *f.* 8. Sporules: *f.* 9. Clavate hairs from among the sporangia; all *magnified*.





TAB. XCVIII.

LOMAGRAMMA. *J. Sm.*

Sorus nudus, elongatus, continuus, lineam marginalem latiusculam totum marginem occupans, in pinnis mutato-contractis. Frons bi-tripedalis, pinnata. Pinnæ lineari-lanceolatae, 4-6 uncias longæ, sessiles, cum rachi articulatae; fertiles contractæ toto margine sporangiferae. Venatio uniformis, reticulata, areolas hexagonas subæquales formans. J. Sm.

L. pteroides. J. Sm. in Hook. Journ. of Bot. v. 3, p. 402.

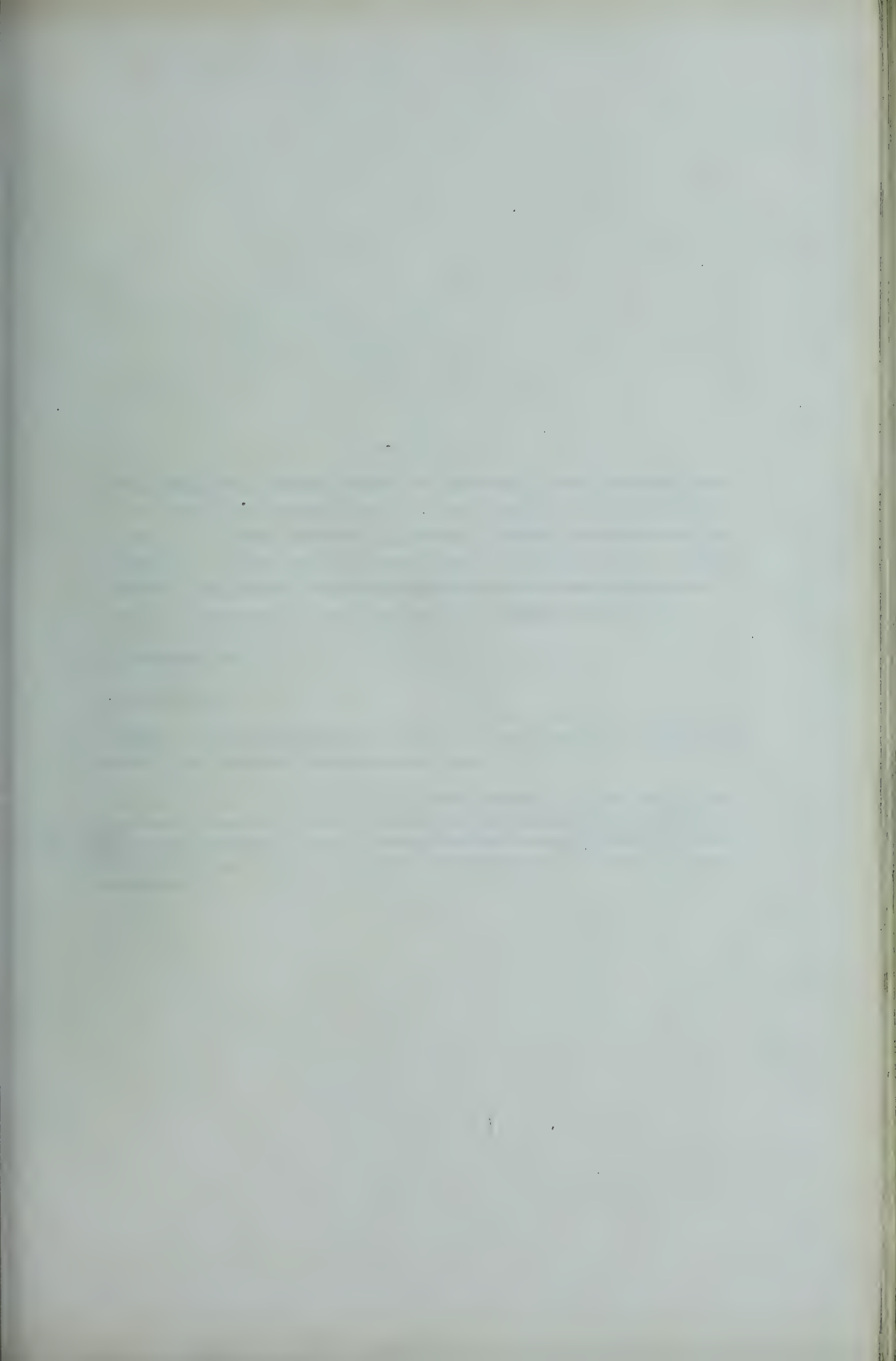
HAB. Luzon. *Cuming (n. 228).*

This Genus is founded upon a solitary species from the island of Luzon, which, in habit, has some affinity with *Stenochlæna*, but it is distinguished from that by its reticulated venation, which is similar to that of *Acrostichum*, especially to one or two of the simple-fronded species: but from which it differs, not only in habit and in the articulated petioles, but also in the sporangia occupying only the marginal portion of the disk of the pinnæ: in that respect bearing some similarity to *Lomaria*, and in its reticulated veins to *Litobrochia*. Probably this Fern may be the *Leptochilus lomarioides* of Blume, though his description is too brief to enable me to determine with certainty." *J. Sm.*

TAB. XCVIII.—*Fig. 1. Sterile pinna; nat. size: f. 2. Portion of the same; magnified: f. 3. Fertile pinna; nat. size: f. 4. Portion of the same: f. 5. Scale from the costa: f. 6, 7. peltate scales from among the sporangia: f. 8, 9. Sporangia: f. 10. Sporules; magnified.*









TAB. XCIX.

DIACALPE. Bl.

Sori globosi, sparsi. Indusium inferum, membranaceum, sessile, sphaericum, medio dorso venulæ infimæ insidens, primum integrum, demum vertice irregulariter rum-pens. Receptaculum punctiforme, vix elevatum.—Frondes fasciculatæ, herbacæ, decompositæ. Pinnæ oblongæ, crenato-lobatæ, supra sparse pilosæ. Rachis hirsuta. Venæ pinnatæ; venulæ simplices rarius furcatæ, venula infima superiore sorifera. Sporangia subsessilis, lato-annulata. Sporulæ subreniformes.

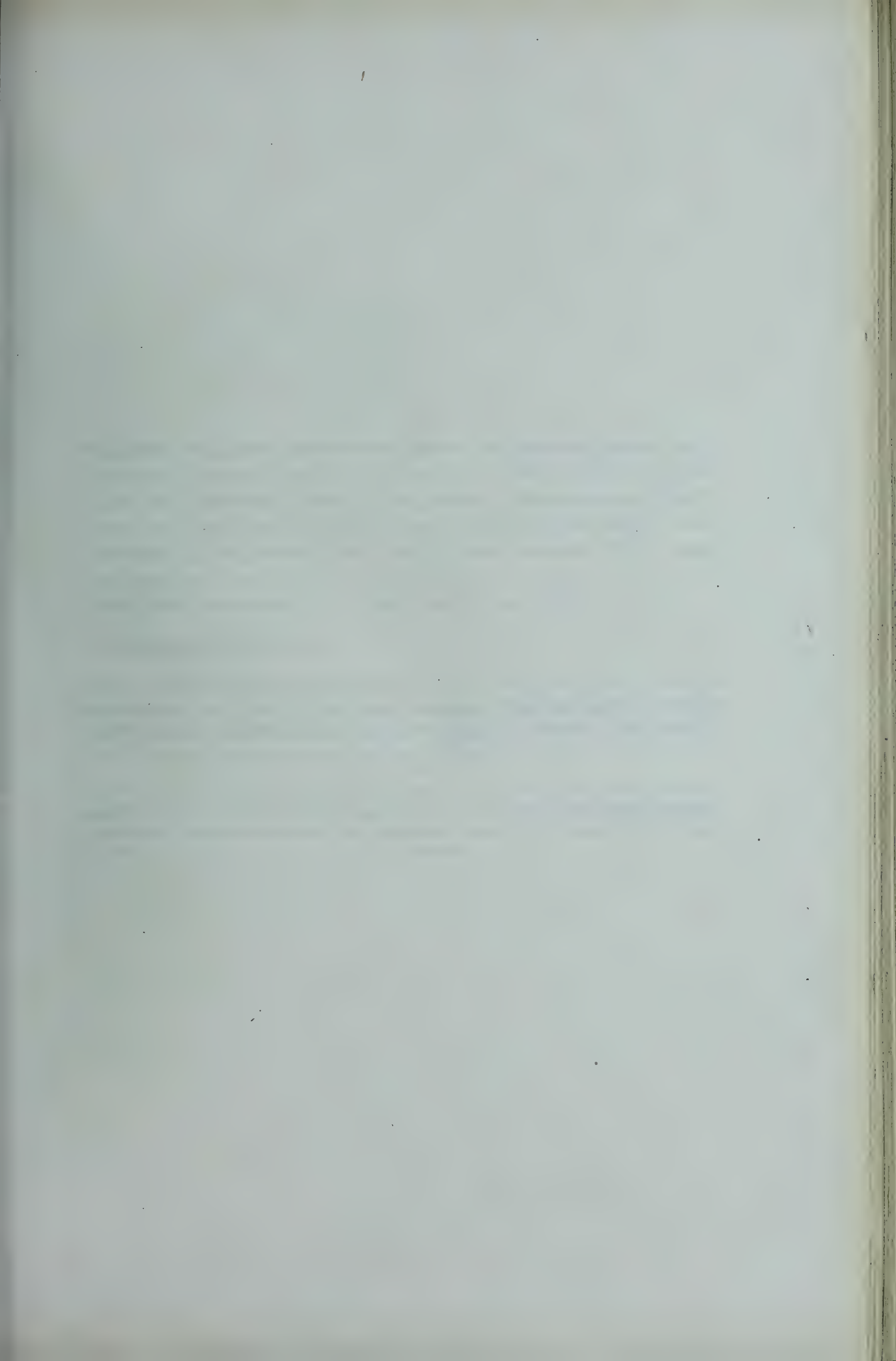
D. aspidioides. Bl.

HAB. Java. Blume.

A Genus very closely allied to *Sphæropteris*, or *Paranema*, Don, (see TAB. XIV.) and differing only in the absence of the stipes to the sorus.

TAB. XCIX.—*Fig. 1.* Upper side of a pinnule; slightly *magnified*: *f. 2.* Under side of a fertile pinna; slightly *magnified*: *f. 3.* Pinna of the same; more highly *magnified*: *f. 4.* Segment of the same with the entire indusium; *do.*: *f. 5.* Portion of the same, the sorus being removed: *f. 6.* Sorus with the indusium burst: *f. 7.* the same cut open: *f. 8, 9.* Sporangia: *f. 10.* Sporules; all more or less *magnified*.







TAB. C.

GYMNOSPHERA. Bl.

Sori globosi, nudi, medio venularum dorso inserti. Receptaculum elevatum, subcylindraceum. Sporangia pedicellata, lato-annulata (annulo vix obliquo) pilis apice clavatis immixta. Sporulæ obtuse trilobæ. Filix arborescens. Frondes bipinnatæ; pinnis lanceolatis subsessilibus subcoriaceo-membranaceis, lobato-pinnatifidis. Venæ pinnatæ, venulæ simplices apice subclavatæ, fere ad marginem attingentes, medio soriferæ.

Gymnosphæra squamulata. Bl.—J. Sm. in Hook. Journ. of Bot. v. 3, p. 419.

HAB. Malacca. *Cuming* (n. 396).

To this Genus may be referred *Polypodium giganteum*, Wall. and *Cyathea venulosa* of the same author (Cat. n. 180). It has quite the arborescent habit and general structure of frond of the Cyatheaceous Ferns, and the elevated receptacle; but the annulus of the sporangia is not oblique, and the sori are entirely destitute of indusium.

TAB. C.—Fig. 1, 2. Sterile pinna; slightly *magnified*: *f. 2.* Portion of a sterile pinna, more *magnified*: *f. 3.* Fertile pinna; slightly *magnified*: *f. 4.* Portion of do.; more highly *magnified*: *f. 5.* Sorus and a receptacle from which the sporangia are removed: *f. 6.* Clavate hair from among the sporangia: *f. 7.* Sporangium: *f. 8.* Sporules; *magnified*.







TAB. CI.

SYNAPHLEBIUM. *J. Sm.*

LINDSÆÆ *sp.*

Indusium speciale marginale, bilabiatum, soros oblongos vel continuos formans.—

Fronde *pinnatæ vel bipinnatæ*. Pinnæ *oblongæ, dimidiatæ, margine superiore fertili integro vel obtuse crenato, dentibus soriferis*. Costa *excentrica vel nulla*. Venæ *furcatæ*; *venulæ angulatim anastomosantes ad marginem receptaculo continuo vel interrupto sporangifero unitæ*. *J. Sm.*

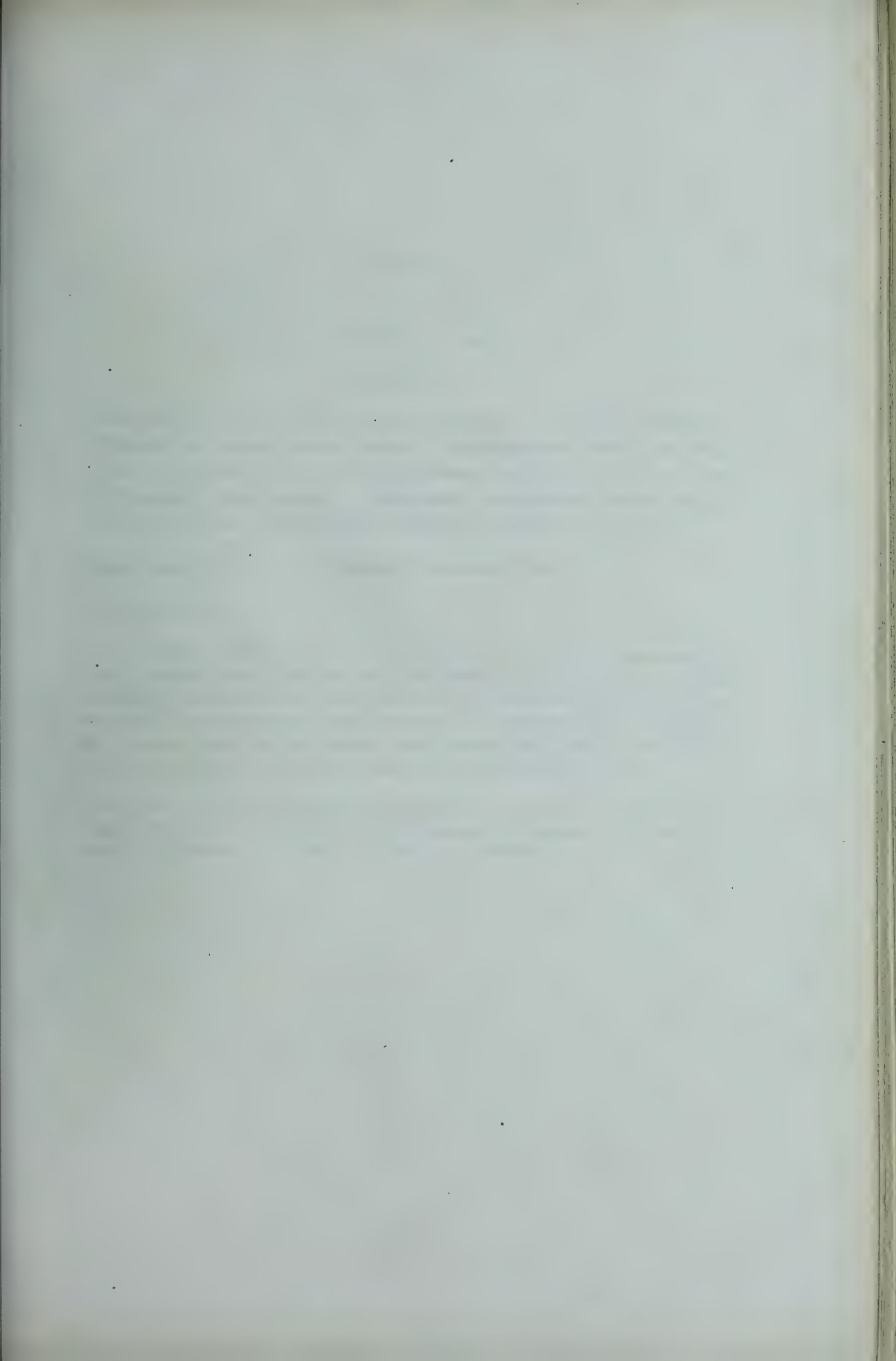
Synaphlebium recurvatum. *Blume*.

HAB. Java.

“Agreeing in habit with *Lindsæa*, but differing in the venules simply anastomosing, similar in that respect to *Schizoloma* (TAB. LXXXIII. B.), but differing from it by the midrib being excentric, and in bearing sori on the superior margin.” *J. Sm.* Mr Smith refers to it *Lindsæa serpens*, Wall., *L. lobulosa*, Wall., and his own *S. obtusum*.

TAB. CI.—*Fig. 1.* Fertile pinnæ; *magnified: f. 2.* Single pinna; *more magnified: f. 3.* Portion of the same with a part of the indusium removed to show the marginal soriferous receptacle; *more magnified: f. 4, 5.* Sporangia; *more magnified: f. 6.* Sporules; *more magnified.*







TAB. CII.

ISOLOMA. *J. Sm.*

LINDSÆÆ *sp. Auct.*

Indusium speciale marginale, bilabiatum, lineare, planum. *Sporangia* verticalia.—

Frondes 1—2-pedales, lineares, pinnatæ. *Pinnæ* oblongo-ellipticæ v. lanceolato-falcatæ basi truncatæ v. auriculatæ brevissime petiolatæ; petiolus cum rachi articulatus. *Costa* centralis. *Venæ* furcatæ: *venulæ* rectæ, apicibus receptaculo sporangifero continuo unitis, in pinnula sterili liberis. *J. Sm.*

Isoloma lanuginosum. J. Sm.—*Lindsæa* ? *lanuginosa, Wall.*

HAB. East Indies.

The two Ferns placed in this Genus by Mr Smith are the *Lindsæa lanuginosa* and *Vit-taria* (*Lindsæa*, Hook. et Grev. Ic. Fil. t. 226) *divergens* of Wallich: and he observes, that though *Isoloma* resembles *Nephrolepis* in habit, its fructification is that of *Lindsæa*, from which it differs in the pinnæ being deciduous, as in *Nephrolepis*, *Didymochlæna*, &c.; and, like them, having the sterile veinlets usually thickened, and producing a white chalky substance in the form of a dot on the superior side, near the margin of the frond.

Fig. 1. Sterile pinna: *f.* 2. Portion of a sterile pinna: *f.* 3. Fertile pinna: *f.* 4. Portion of the latter: *f.* 5. Portion of the indusium, showing the sporangia on the receptacle: *f.* 6. Hair from the pinnæ: *f.* 7, 8. Sporangia: *f.* 9. Sporules:—all more or less *magnified*.







TAB. CIII.

ANEMIDICTYON. *J. Sm.*

ANEMIE *Auct.*

Sporangia ovata, vasculoso-reticulata, in spicas unilaterales dense paniculatas disposita, sessilia, biseriata, vertice completo-annulata, extrorsum longitudinaliter dehiscentia. *Indusium* nullum. *Sporulæ* obtusæ, triangulares, echinatæ.—*Filices Americæ meridionalis præcipue tropicæ. Frondes stipitatæ pinnatæ. Pinnæ costatæ. Venæ furcatæ, non raro anastomosantes. Pedunculi geminati e basi frondis, spicis decompositis.*

Anemidictyon Phyllitidis. J. Smith in Journ. of Bot. N. S. v. i. ined.—Anemia Phyllitidis, Sm.

HAB. Brazil.

Mr Smith, following up the idea—which is surely carried to a most undue and inconvenient and unnatural length, that the slightest difference in venation is sufficient to constitute generic distinctions—has formed of *Anemia Phyllitidis* and some allied species, having the veins anastomosing, the genus *Anemidictyon* here represented.

Fig. 1. Frond ; nat. size : f. 2. Portion of the fertile frond :—magnified.







TAB. CIV. A.

TROCHOPTERIS. *Gardn.*

Sporangia ovata, in laciniis loborum 2 inferiorum frondis biseriatim disposita, basi vasculoso-reticulata, vertice ad medium completo-annulata, hinc longitudinaliter dehiscentia. *Indusium* nullum. *Sporulae* triangulares, striatae, scabrellae.—*Filicula Brasiliensis*; fronde fere unciali, pilosa, 5-lobata, lobis 2 inferioribus laciniato-sectis, laciniis soriferis, lobis reliquis integris sterilibus. (Venae radiatae repetitum furcatae.) *Gardn.*

Trochopteris elegans. *Gardn. Herb. Brazil, n. 4035, et in Hook. Lond. Journ. of Bot. v. i. p. 74. Tab. 4.*

HAB. Clefts of rocks on the summit of the Serra de Natividade, in the province of Goyaz, Brazil. *Mr Gardner.*

This beautiful and highly curious and new Fern, Mr Gardner has distinguished from *Anemia* (TAB. NOSTR. XC.) chiefly in consequence of the different habit. In *Anemia* he observes there are two kinds of fronds, the barren and fertile: here there is only one kind of frond, and that a simple, or only a lobed one, the two lower and deeper lobes (corresponding with the fertile ones in *Anemia*) bearing the sporangia on their lacinated margins.

TAB. CIV. A.—*Fig. 1.* *Trochopteris elegans*; nat. size: *f. 2.* Simple frond: *f. 3.* Portion of the fertile lobe: *f. 4.* Sporangium: *f. 5.* Sporules:—more or less magnified.

TAB. CIV. B.

MOHRIA. *Sw.*

OSMUNDÆ. *Lam. Schrad.* ADIANTI. *L.*

Sporangia sessilia, ovato-globosa, nuda, prope margines concavos paginae inferioris frondis non contractae inserta, distincta, reticulata, vertice annulata, extus longitudinaliter dehiscentia.—Fronde caespitosa, stipitata, bipinnatae vel subtripinnatifidae, subtus piloso-paleaceae. Pinnae oblongae, obtusae, patentes. Pinnulae ovatae, subcuneatae, inciso-lobatae, costatae; venis dichotomis ultimis ante apices dentium evanescentibus; in frondibus fertilibus sporangiferis. Rachis alata. Pinnae steriles latiores, planae.

Mohria thurifraga. *Sw. Syn. Fil. p. 159, et 385.*—*Adiantum Caffrorum, L. Osmunda thurifraga, Lam.*

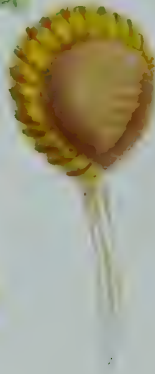
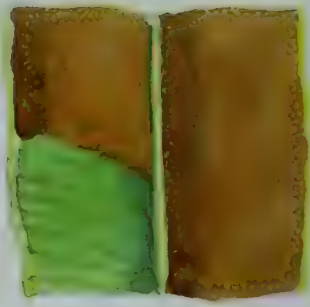
HAB. South Africa.

Of this Genus, in many respects allied to *Trochopteris*, and consequently to *Anemia*, a second species, *M. crenata*, Desv., is found in Madagascar. Both are, however, confined to the southern hemisphere.

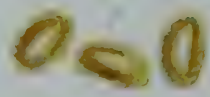
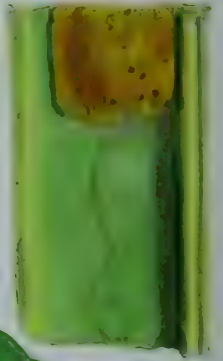
TAB. CIV. B.—*Mohria thurifraga.* *Fig. 1.* Portion of sterile frond: *f. 2.* Portion of fertile frond seen from beneath: *f. 3.* Smaller portion of do.: *f. 4.* Apex of a vein bearing a sporangium: *f. 5.* Sporangium: *f. 6.* Sporules:—all more or less magnified.



A



B



TAB. CV. A.

ELAPHOGLOSSUM. Schott.

ACROSTICHI *sp. Auct.* OLFERSIÆ *sp. Presl.*

Sorus superficialis totam paginam inferiorem frondis fertilis plerumque contractæ obtegens.—*Frondes simplices, integræ, oblongæ vel lineari-lanceolatæ, nudæ vel squamosæ; fertilium margine non raro membranaceo. Venæ simplices vel furcatæ, internæ: venulæ parallelæ, apicibus liberis et clavatis, intra marginem incrassatum terminantes. J. Sm.*

Elaphoglossum simplex. Schott.—*J. Sm. in Hook. Journ. of Bot. v. iv. p. 148.*—*Acrostichum simplex. Sw.*

HAB. West Indies and tropical parts of S. America.

At our TAB. LXXIX. A., while I have figured only that group of *Olfersia*, which has pinnate fronds, and the sori clothing both sides of the fertile pinnæ, I have at the same time given Presl's character, which includes *Elaphoglossum*, Schott. This Mr J. Smith again separates from *Olfersia*, with the character above given. It embraces most of the old Genus *Acrostichum* with simple entire fronds.

TAB. CV. A.—*Fig. 1.* Portion of the frond of *Elaphoglossum simplex*;—*nat. size: f. 2.* Portion of the barren frond: *f. 3.* Portion of the fertile frond (some of the sporangia removed to show the venation): *f. 4.* Clavate hairs from among the sporangia; *f. 5, 6, 7.* Sporangia: *f. 8.* Sporules;—more or less *magnified.*

TAB. CV. B.

STENOCHLÆNA. J. Sm.

ACROSTICHI *sp. Auct.* LOMARIÆ *sp. Kaulf. Wall. Willd.* OLFERSIÆ *sp. Presl.*

Sorus superficialis, totam paginam inferiorem frondis fertilis contractæ obtegens.—*Frondes pinnatæ, nudæ v. squamosæ. Pinnæ petiolatæ, cum rachi articulatæ. Pinnæ fertiles lineares, marginibus membranaceis revolutis indusiiformibus. Venæ simplices v. furcatæ externæ: venulæ parallelæ, apicibus exsertis serraturis cartilagineis formantibus, v. conniventibus et marginem incrassatum formantibus. J. Sm.*

Stenochlæna scandens. J. Sm. in Hook. Journ. of Bot. v. iv. p. 149.—*Acrostichum, Linn.*—*Lomaria, Willd.*

HAB. East Indies and the Philippine islands. *Cuming, Herb. Philipp. (n. 229.)*

The several species of this group, or Genus, as Mr J. Smith deems it, have been referred sometimes to *Acrostichum*, and sometimes to *Lomaria*, according as the margin has been considered an indusium or not. It certainly is not a true indusium, and therefore belongs to the *Acrostichum* family, whatever may be considered to be its claims to form a peculiar Genus. Presl includes it in his *Olfersia*. Mr Smith justly observes that at fig. 4. our representation of the anastomosing of the veins is not correct: there is, indeed, a thickening of the substance transversely, where the veins terminate at the broad margin; and that, at first sight, gives the appearance of the veins uniting transversely.

TAB. CV. B.—*Fig. 1.* Sterile pinna of *Stenochlæna scandens*; *nat. size: f. 2.* Portion of do.; *magnified: f. 3.* Fertile pinna; *nat. size: f. 4.* Portion of the same, the sporangia partially removed (the transverse union of the nerves incorrect); *magnified: f. 5, 6.* Sporangia: and *f. 7.* Sporules; *magnified.*





TAB. CVI. A.

OCHROPTERIS. *J. Sm.*

ADIANTI *sp. Sw.* CHEILANTHES. *Bory.*

Sori marginales, transversi, interrupti, ad basin indusii. *Indusium* transverse oblongum, marginale, ex apice venularum 2—4 convergentium, intus liberum.—*Filix Mauritiana*.—*Fronde* deltoideæ, decompositæ. *Stipes* et *rachis* glabri, pallidi. *Pinnulæ ultimæ*, seu *lacinia*, oblongæ, obtusæ, marginatæ, basi cuneatæ, decurrentes, ad apicem vel ad marginem soros solitarios, vel raro geminatos, gerentes. *Venæ pinnatim furcatæ, radiatæ*: *venulæ rectæ, apicibus clavatis*. *J. Sm.*

Ochropteris pallens. *J. Sm.*—*Adiantum*, *Sw.*—*Cheilanthes davallioides*. *Bory.*

HAB. Mauritius.

“The peculiar and distinct habit is the principal feature that marks this as not forming a natural combination with any of the neighbouring genera.” *J. Sm.* Certainly it has little natural affinity either with *Adiantum*, or *Cheilanthes*, with which it has been respectively united.

TAB. CVI. A.—*Fig. 1.* Pinna, *nat. size*: *f. 2.* Pinnulæ: *f. 3.* Apex of a lobe or pinnule, with the sorus laid open; *f. 4, 5, 6.* Clavate hairs among the sporangia: *f. 7, 8.* Sporangia: *f. 9.* Sporules;—*magnified*.

TAB. CVI. B.

CHEILANTHES. *Sw. J. Sm.*

Sori rotundati, marginales, solitarii vel contigui. *Indusium* plerumque reniforme, raro oblongum, sorum unicum, vel soros 2—3, includens.—*Fronde* bitripinnatæ, glabræ, pilosæ, glandulosæ, vel squamosæ. *Pinnulæ nunc parvæ et orbiculares*. *Stipes plerumque ebeneus*. *Sori non raro confluentes*. *Venæ furcatæ*: *venulæ rectæ, apicibus liberis sporangiferis*. *J. Sm.*

Cheilanthes suaveolens. *J. Sm.*

HAB. South of Europe.

Closely allied to *Adiantum* as well as to *Ochropteris* and *Cassebeera*: but the several species now generally included under *Cheilanthes* have a peculiar habit.

TAB. CVI. B.—*Fig. 1.* Pinna of *Cheilanthes suaveolens*: *f. 2.* Pinnule of the same: *f. 3.* Portion of the same, with one indusium laid open: *f. 4, 5.* Sporangia: *f. 6.* Sporules;—all more or less *magnified*.

THE HISTORY OF THE
CITY OF BOSTON

FROM THE FIRST SETTLEMENT
TO THE PRESENT TIME
BY
JOSEPH NEALE, ESQ.

IN TWO VOLUMES.
THE FIRST VOLUME.
CONTAINING
THE HISTORY OF THE
CITY OF BOSTON
FROM THE FIRST SETTLEMENT
TO THE PRESENT TIME
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THE SECOND VOLUME.
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THE HISTORY OF THE
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TAB. CVII.

POLYTÆNIUM. *Desv.*

Sori longissimi continui, interrupti, 2—4 inter costam et marginem, lineares, immersi, paralleli, venas longitudinales occupantes. *Indusium* nullum, nisi margines elevati sulcorum.—*Filix Americæ tropicæ*. Frondes *cæspitosæ*, *linearilanceolatæ*, *sessiles*, *costatæ*, *venosæ*. Venæ longitudinales, *soriferæ*, *venulis transversalibus obliquis unitæ et areolas elongatas formantibus*. Radices *ferugineo-tomentosæ*.

Polytænium lineatum. *Desv.*—*Vittaria lanceolata et Hemionitis lineata*. *Sw.*—*Anthrophyum*. *Kaulf.*

HAB. West India islands, and the tropical parts of the South American continent.

In *Vittaria* (TAB. LXV. B.) the lengthened sori are sunk into a groove at the very margin of the frond; in *Teniopteris* (TAB. LXXVI. B.) and *Pteropsis* (TAB. LXXVII. B.) the solitary sori are sunk in a groove at a little distance from the margin: here the sori form several sunken lines or grooves, lying parallel with each other, between the costa and the margin; and these sori evidently have their origin on the longitudinal nerves and on them alone—the obliquely transverse ones, or venules, being destitute of sporangia.

TAB. CVII.—*Fig. 1. Polytænium lineatum*; *nat. size*: *f. 2.* Portion of the same: *f. 3.* Lesser portion, with sori, (the sporangia removed from one receptacle to show the nerve): *f. 4, 5, 6.* Sporangia; *f. 7.* Sporules;—more or less *magnified*.





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TAB. CVIII.

TRICHOMANES. L.

(See GEN. CHAR. et TAB. XXXI.)

Subgenus HYMENOSTACHYS.—HYMENOSTACHYS, *Bory*.

Frondes fertiles dissimiles, contractæ simplices, spicatae, per totam suam longitudinem soriferæ. Indusia membrana unita.

Trichomanes elegans. Rudge.—*Hymenostachys diversiformis. Bory.*

HAB. Tropical South America. French Guiana.—Gorgona, an island off the coast of Panama. *Mr Barclay.*

Another form which may be considered a third, a subgenus of *Trichomanes*, is the *Feea* of *Bory*, *Trichomanes spicatum*, R. Hedw., of which a figure is given in Hook. Ex. Flora, TAB. 52. It is distinguished by having the fertile fronds dissimilar, and spiked; but the indusia are free, nearly sessile on the rachis; not united by a membrane.

TAB. CVIII.—*Fig. 1. Fertile and sterile frond of Trichomanes elegans; nat. size: f. 2. Portion of the sterile frond: f. 3. Portion of the fertile do.: f. 4. Two of the indusia, (one laid open): f. 5, 6. Sporangia: f. 7. Sporules;—magnified.*



A



B





TAB. CIX. A.

ANTROPHYUM. *Kaulf.*

Sori longissimi, continui, lineares, venis frondis reticulatis magis minusve immersi nunc superficiales; sulcorum marginibus plerumque elevatis indusiiformibus.—*Fronde simplices cespitosæ, lanceolatae, coriaceo-membranaceæ indivisæ, costatæ vel ecostatæ. Venæ uniformes reticulatæ, areolis elongatis subhexagoniis. Radices sæpe ferrugineo-tomentosæ.*

Antrophyum plantagineum. Kaulf.—*β. Lessoni. Hook. et Arn. Bot. of Beech. Voy. p. 74.*

A. Lessoni. Bory in Duperrey Voy. Bot. p. 255. t. 28. f. 2.

A Genus established by Kaulfuss; but too near *Hemionitis*, with which Presl unites it; as already observed, TAB. LXXIV. B. The sunken character of the sori is by no means constant; and then, except in the undivided frond, it cannot be distinguished from *Hemionitis*.

TAB. CIX. A.—*Fig. 1.* Portion of the frond of *Antrophyum plantagineum*, *β* : *f. 2.* Smaller portion of the same : *f. 3.* Portion of a sorus; the sporangia in part removed from the receptacle : *f. 4, 5,* Glandular hairs found among the sporangia : *f. 6, 7.* Sporangia : *f. 8.* Sporules ;—*magnified.*

TAB. CIX. B.

DIBLEMMA. *J. Sm.*

Sorus nudus, superficialis, duplex; 1.—linearis, marginalis, continuus, in venulam marginalem situs; 2.—*sori* irregulares, rotundati v. oblongi, in venulas breves anastomosantes siti.—*Fronde simplices, lineari-lanceolatae, attenuatae. Venæ reticulatæ, areolas inæquales formantes: venulæ plurimæ, liberæ, apice clavatæ. J. Sm.*

Diblemma Samarensis. J. Sm. in Hook. Journ. of Bot. v. iv. p. 399.

HAB. Philippine islands. *Cuming.*

"This simple-fronded Fern has the venation of some species of *Drymaria* and of *Drymoglossum*, and is peculiar in having the simple rounded sori of the former, and the compound elongated marginal sorus of the latter on the same frond." *J. Sm.*—Only one species is known.

TAB. CIX. B.—*Fig. 1.* Portion of *Diblemma Samarensis*; *nat. size* : *f. 2.* Portion of the same : *f. 3.* Smaller portion : *f. 4, 5.* Sporangia : *f. 6.* Sporules ;—*magnified.*





TAB. CX. A.

SYNAMMIA. Presl. J. Sm.

Sori oblongi, nudi, crassiusculi, dorso venulæ infimæ liberæ insidentes.—*Filix Chilensis*. *Rhizoma repens*. *Fronde stipitata, tenuiter coriaceæ, pinnatæ, pinnis adnatis, serrulatis*. *Venæ pinnatæ, internæ, tenuissimæ, ramosæ*. *Venulæ oppositæ, in arcum angulatum confluentes et maculam hexagonideam efficientes, infima supra basin inferioris emergens, libera, apicem versus sorifera, secundaria ex angulis arcus exorientes, liberæ, infimaque apice globoso-incrassatæ*. Presl.

Synammia triloba. Presl.—*Polypodium trilobum*. Cav.

HAB. Chili.

Besides the *Polypodium trilobum* of Cavanilles, Presl refers to this Genus the *Grammitis elongata*, Sw.:—which Mr J. Smith places in *Phlebodium* (Br.):—the same Genus with *Pleopeltis*, Presl.

TAB. CX. A.—*Fig. 1*. Portion of *Synammia triloba*; *nat. size*: *f. 2*. Portion of the same: *f. 3*. Smaller portion, with two sori, showing the venation: *f. 4, 5*. Sporangia: *f. 6*. Sporules;—*magnified*.

TAB. CX. B.

LECANOPTERIS. Bl.

Sori apicibus dentium frondis cartilagineorum et excavatorum immersi (siccitate reflexi.) *Receptaculum* ovali-orbiculatum, latissimum, concaviusculum, undique capsulis pilisque densissimis obtectum.—*Frons coriacea, lineari-lanceolata, pinnatifida, laciniis ovato-subrotundis, inciso-dentatis*. *Venæ pinnatæ*. *Venulæ internæ tenuissimæ, in maculas hexagonideas anastomosantes, secundariæ liberæ, globuloso-incrassatæ, rectæ aut hamatæ*. Presl.

Lecanopteris carnosæ. Blume.

HAB. Java. Philippine islands. Cuming.

This is a very remarkable Fern, peculiar in habit, and still more so in its fructification. The teeth of the segments are extended into broad cartilaginous lobules, which bear the sori, and which have a considerable resemblance to the fructification of *Nephroma* and *Peltidea* among the Lichens.

TAB. CX. B.—*Fig. 1*. Portion of a frond; *nat. size*: *f. 2*. Smaller portion of the same: *f. 3*. Portion of two sori: *f. 4, 5*. Sporangia: *f. 6*. Sporules;—*more or less magnified*.



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TAB. CXI. A.

ACTINOSTACHYS. Wall.

Sporangia subquadriserialia, appendicibus digitatis.—Cæterum ut in *Schizæa*, (TAB. NOSTR. XIX.).

Actinostachys pennula.—*Schizæa pennula*. Sw.—*S. trilateralis*. Schkuhr, Fil. Tab. 136.—*S. penicellata*. H.B.K.—*S. incurvata*. Meyer.

The quadriserial arrangement of the sporangia, and the digitate, not pinnate, appendages on which the sporangia are placed, led Dr Wallich and others to consider these as sufficient characters to constitute generic distinction. Our character of *Schizæa* at Tab. XIX. was drawn up with the view of including both kinds of fructification. But as the plate (TAB. XIX.) only exhibits the true *Schizæa*, we here give Dr Wallich's *Actinostachys*, to which also belong *S. digitata*, Sw., from Ceylon, and *S. subtrijuga*, Mart. The species consequently inhabit the E. Indies and S. America.

TAB. CXI. A.—*Actinostachys pennula*. Fig. 1. Plant; nat. size; f. 2. Upper portion of the same, the appendages more developed; nat. size; f. 3. Single appendage; f. 4. Portion of the same with the sporangia, cut through transversely; f. 5, 6. Sporangia; f. 7. Sporules;—more or less magnified.

TAB. CXI. B.

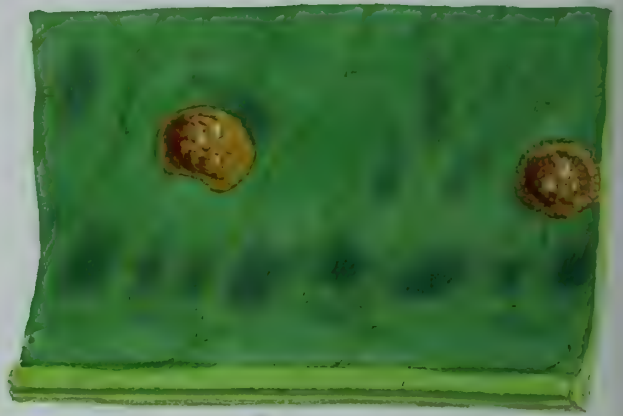
LYGODICTYON. J. Sm.

Venæ pinnarum reticulatæ.—Cæterum ut in *Lygodio*, (TAB. XXVIII.)

Lygodictyon Forsteri. J. Sm. *Lygodium reticulatum*. Schkuhr.—*Ophioglossum scandens*. Forst.—*Hydroglossum polycarpum*. Willd.

In true *Lygodium* (TAB. XXVIII.) the veins of the pinnæ are dichotomous, the veinlets free; in the present genus, as Mr J. Smith considers it, the veins form a net-work by anastomosing, with oblong meshes or areolæ.

TAB. CXI. B.—*Lygodictyon Forsteri*. Fig. 1. Sterile pinna; magnified; f. 2. Fertile pinnæ; nat. size; f. 3. Single fertile pinna; magnified; f. 4. Spike of fructification; f. 5, 6. Sporangia; f. 7. Sporules;—magnified.





TAB. CXII.

PHLEBODIUM. *Br. J. Sm.*

POLYPODIUM *Auct.* PLEOPELTIS *Humb. Presl.* • SYNAMMIÆ *sp. Presl.*

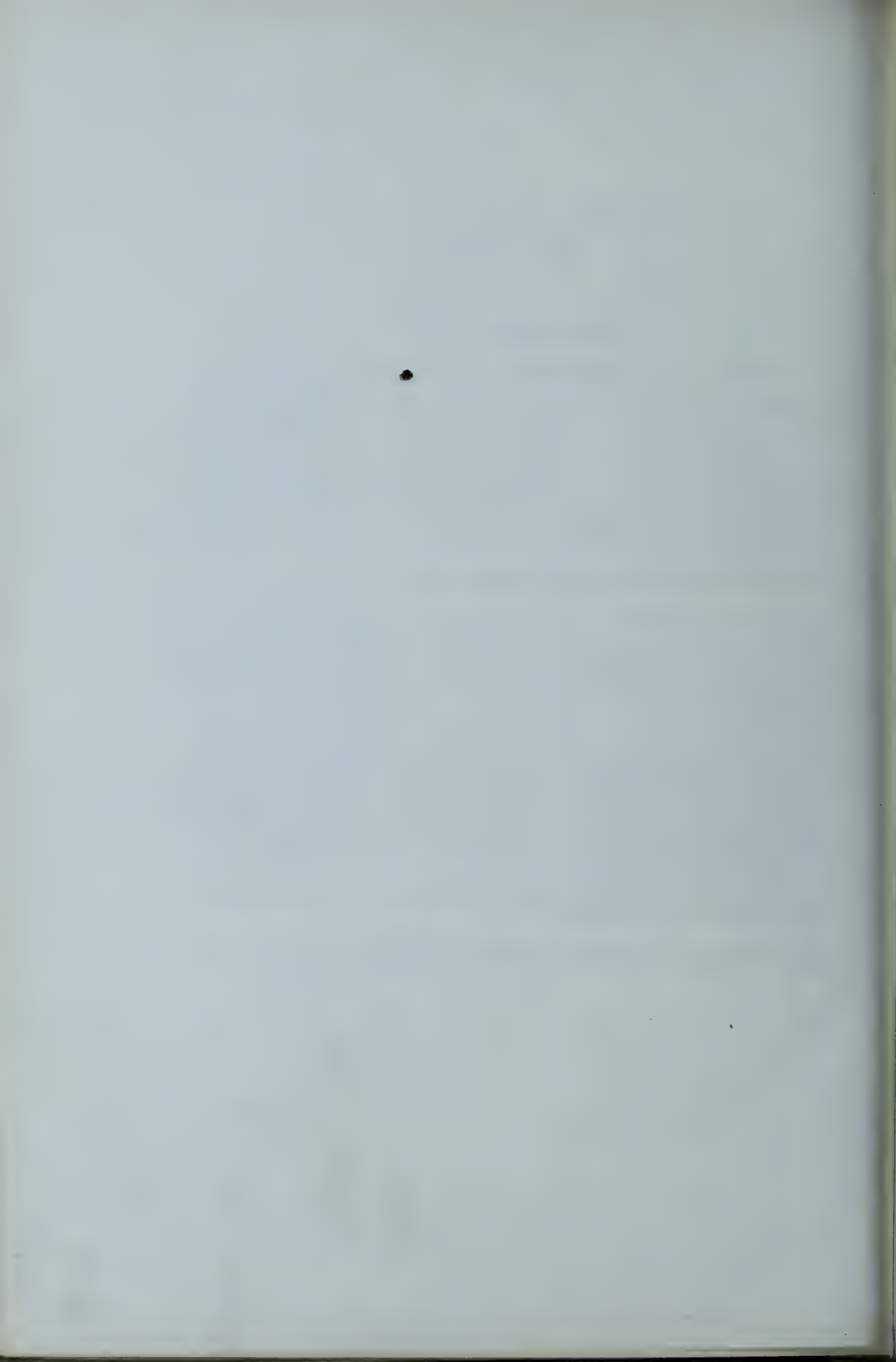
Sori rotundati, ovales, vel rarius oblongo-lineares, transversim uniseriales v. multi-seriales.—Venæ pinnatæ seu varie ramosæ; venulæ arcuatæ v. angulatim anastomosantes, externe venulas secundarias duas, raro plures, transversim conniventes, apice soriferas, efficientes. Frondes simplices, integræ, pinnatifidæ v. pinnatæ, membranaceæ seu coriaceæ, nudæ v. squamuliferæ. Sori nunc seriatim dispositi inter duas venas primarias. J. Sm.

Phlebodium aureum. (TAB. CXII.) *Polypodium. Linn.*

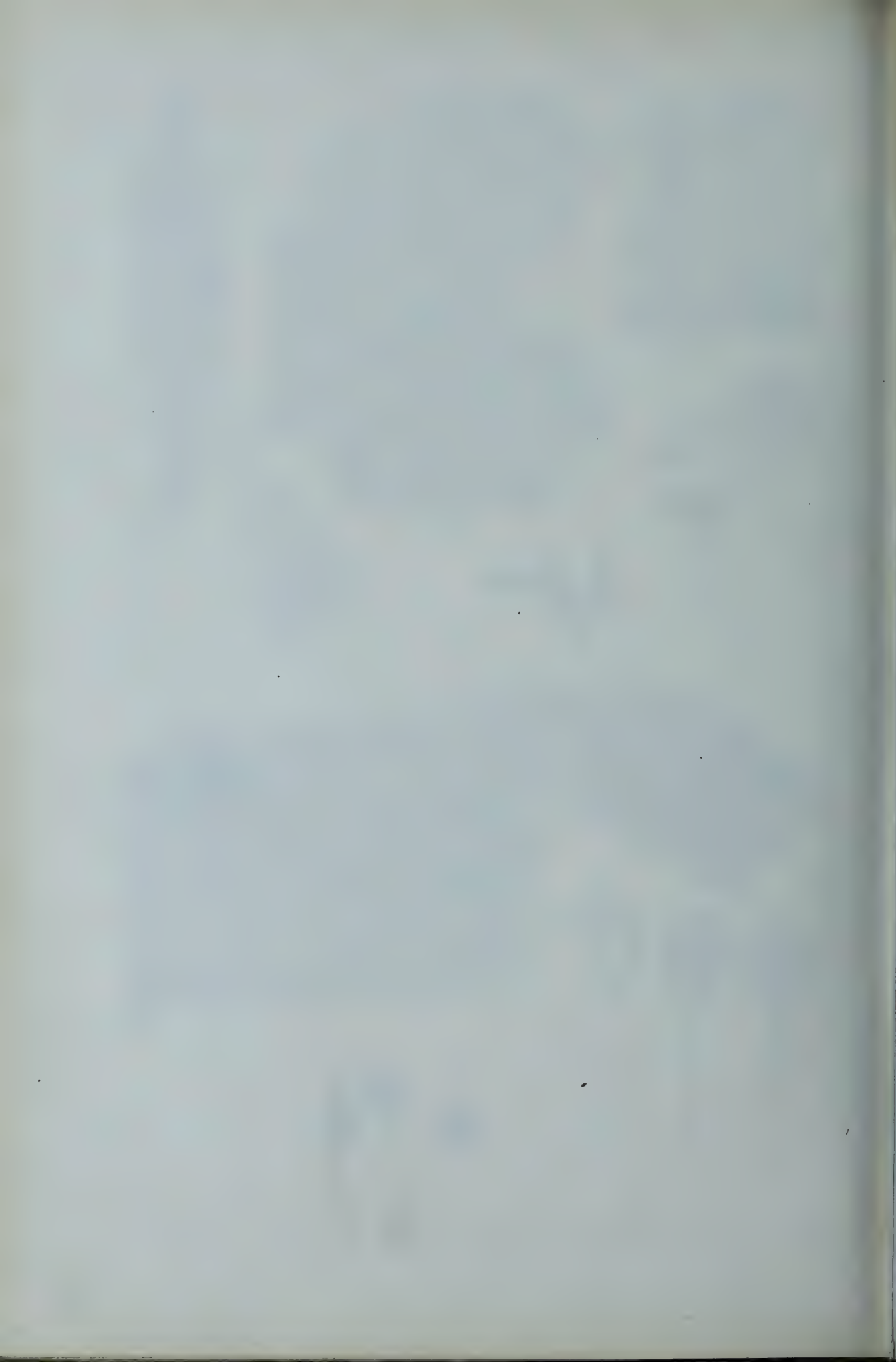
Mr Brown first distinguished this Genus "from *Drymaria*; and, from those species of it, especially, in which the principal vein of the sorus is distinctly marked, the transition is easy to *Polypodium aureum*, *decumanum*, and a few other species having anastomosing veins, and in which the sori are placed on the apices of two, or more, rarely 3, connivent ultimate ramuli, included in an area formed by the anastomosing secondary veins. But these species from the identity of habit, may be included in or appended to a more extensive group, whose anastomosing veins form areolæ or meshes, in each of which only one sorus exists, and that terminating a single branch. This section, which may be named *Phlebodium*, and whose species have either pinnate, deeply pinnatifid, or more rarely simple fronds, appears to me to be strictly natural, though it includes several species having the spurious indusium of *Pleopeltis*, and at least one with an oval, or at least oblong sorus," (I presume *Synammia elongata*, *Pr.* TAB. CX. A.)

It is the first group, or *Euphlebodium*, which is here represented. The 2d, (*Pleopeltis* of authors) is given at TAB. XVIII. A.

Fig. 1. Fertile segment of *Phlebodium aureum*; *nat. size*: *f.* 2, 3. Portions of the same: *f.* 4, 5, 6. Sporangia: *f.* 7. Sporules;—more or less *magnified*.







TAB. CXIII. A.

CETERACH. Willd.

Sori lineares, elongati, dorso venularum superiarum insidentes. *Indusium* lineare, angustum, planum nunc obsoletum.—*Venæ internæ, flabellatæ, dichotomæ, marginem versus anastomosantes.* Frondes *cæspitosæ, subcoriaceæ, pinnatifidæ vel pinnatæ, dorso squamis membranaceis imbricatis ferrugineis densissime obtectæ.*

Ceterach officinarum. Willd.—*Grammitis.* Sw.—*Scolopendrium.* Sm.

The near affinity of this Genus to *Asplenium* has been already pointed out by us under *Asplenium Dalhousiæ*, Ic. Plant. TAB. 103. It differs, however, from that Genus, upon a closer investigation, remarkably in habit, in the reticulated marginal veins, and in the dense covering of scales on the under side of the frond.

TAB. CXIII. A.—*Fig. 1.* Frond; *nat. size*: *f. 2.* Fertile portion of do., part of the scales removed: *f. 3.* Sorus: *f. 4.* Scale: *f. 5, 6.* Sporangia: *f. 7.* Sporules;—*magnified.*

TAB. CXIII. B.

NEOTTOPTERIS. J. Sm.

ASPENIUM. Auct.

Sori lineares, elongati, angustissimi, quandoque interrupti, ad latus superius venarum siti. *Indusium* lineare, angustissimum, planum, superne dehiscens.—Frondes *cæspitosæ, simplices, lineari-lanceolatæ, coriaceæ, marginatæ.* *Venæ furcatæ, transversæ, dense parallelæ, apicibus vena marginali incrassata conjunctæ.*

Neottopteris Nidus. J. Sm.—*Asplenium.* L.

This and two or three allied species, which form a section of *Asplenium*, according to Presl (his § THAMNOPTERIS), constitute a distinct Genus according to the views of Mr J. Smith; to which, however, in justice to Presl, the name of *Thamnopteris* should be retained.

TAB. CXIII. B.—*Fig. 1.* Portion of a fertile frond, slightly *magnified*: *f. 2.* Portion of a sorus: *f. 3, 4, 5.* Sporangia: *f. 6.* Sporules;—more or less *magnified.*







TAB. CXIV. A.

HUMATA. Cav. J. Sm.

DAVALLIÆ sp. Auct.

Sori subrotundati, in dorso dentium, venulas terminantes. *Indusium* subrotundum v. reniforme, basi lata affixum superne et ad latus liberum.—*Fronde*s (nunc biformes) coriaceæ, simplices vel pinnatifidæ. Venæ simpliciter pinnatæ vel unibifurcatæ. J. Sm.

Humata heterophylla. J. Sm.—*Davallia*. Sm.

This again constitutes a section of *Davallia* with Presl; while Mr J. Smith is of opinion that the thick veins and coriaceous texture of the indusium will serve to keep *Humata* distinct from the allied Genera.

TAB. CXIV. A.—*Fig.* 1. Portion of a sterile frond: *f.* 2, 3. Portions of the fertile frond: *f.* 4, 5. Sporangia: *f.* 6. Sporules;—*magnified*.

TAB. CXIV. B.

ODONTOLOMA. J. Sm.

SACCOLOMATIS sp. Pr. DAVALLIÆ sp. Auct.

Sori rotundati, confluentes v. remoti. *Indusium* speciale subrotundum, frondium dentibus brevius.—*Fronde*s pinnatæ v. bipinnatæ; pinnæ oblongo-dimidiatæ, margine superiore subintegro, dentato v. laciniato, dentibus segmentisve obtusis unisoris, seriem marginalem formantibus. Costa excentrica v. nulla. Venæ furcatæ: venulæ rectæ, apicibus liberis soriferis. J. Sm.

Odontoloma Boryana. J. Sm.—*Saccoloma*. Presl.

A Genus, separated from *Saccoloma*, Pr. (TAB. LVIII. B.) on account of its dimidiate pinnules.

TAB. CXIV. B.—*Fig.* 1. Portion of a frond; *nat. size*: *f.* 2. Pinna: *f.* 3. Portion of do.: *f.* 4, 5. Sporangia: *f.* 6. Sporules;—*magnified*.



A



B





TAB. CXV. A.

PLATYLOMA. *J. Sm.*

PTERIDIS *sp. Auct.* ALLOSORI. *Pr.*

Sori transversi, oblongi, lateraliter confluentes, sorum marginalem latum compositum formantes.—*Fronde* *pinnatæ v. bipinnatæ*. *Stipes plerumque ebeneus, glaber, pilosus v. squamiferus*. *Pinnæ cum rachi articulatæ*. *Venæ furcatæ*: *venulæ rectæ, sporangiferæ, apicibus liberis*.

Platyloma Brownii. J. Sm.—*Adiantum paradoxum. Br.*

I scarcely see how this Genus can be distinguished either in habit or character from the *Allosorus hastatus, Presl*, given as the type of *Allosorus* at our TAB. V. That plant, however, Mr J. Smith unites with *Cassebeera*, which he considers to differ from *Platyloma* by its narrower (compound) sorus.

TAB. CXV. A.—*Fig. 1.* Portion of a frond; *nat. size*: *f. 2.* Lesser portion: *f. 3.* *Sori*, in part removed from the receptacles: *f. 4, 5.* *Sporangia*: *f. 6.* *Sporules*;—*magnified*.

TAB. CXV. B.

CRYPTOGRAMMA. *Br.*

PTERIS. *L.* ALLOSORUS. *Bernh.* GYMNOGRAMMITIS *sp. Pr.*

Sori lineares (v. subrotundi) venulis costæ (pinnulæ) obliquis insidentes. *Capsulæ* pedicellatæ, receptaculo communi elevato nullo. *Involucrum (indusium)* commune (pinnulæ) marginale, continuum, disco venoso, margine scarioso libero, sæpius induplicato; *partiale* nullum.—*Filiculæ glabellæ*; frondibus *cæspitosis bi-tripinnatifidis*: *centralibus mutato-contractis fertilibus, exterioribus sterilibus*; *involucris dorsum totum pinnulæ tegentibus*; *capsulis breve pedicellatis, annulo incompleto*; *sporulis trigonis, lævibus. Br.*

Cryptogramma crispa. Br.—*Pteris crispa. L.*—*Allosorus. Bernh.*

The type of this Genus is the *C. acrostichoides* of Arctic America, as Mr Brown informs us:—but our own *Pteris crispa* undoubtedly possesses the same generic structure. It is true that this is included in the *Allosorus* of Bernhardt; but the *Cheilanthes odora*, Sw. (*Adiantum pusillum*, All. et Willd.) seems to be the plant which Bernhardt had chiefly in view in forming that Genus, and now the name is applied to ferns of a totally different structure.

TAB. CXV. B.—*Fig. 1.* Fertile pinna; *nat. size*: *f. 2.* Portion of the same, the indusium laid open: *f. 3, 4, 5.* *Sporangia*: *f. 6.* *Sporules*.



TAB. CXVI.

OXYGONIUM. Presl.

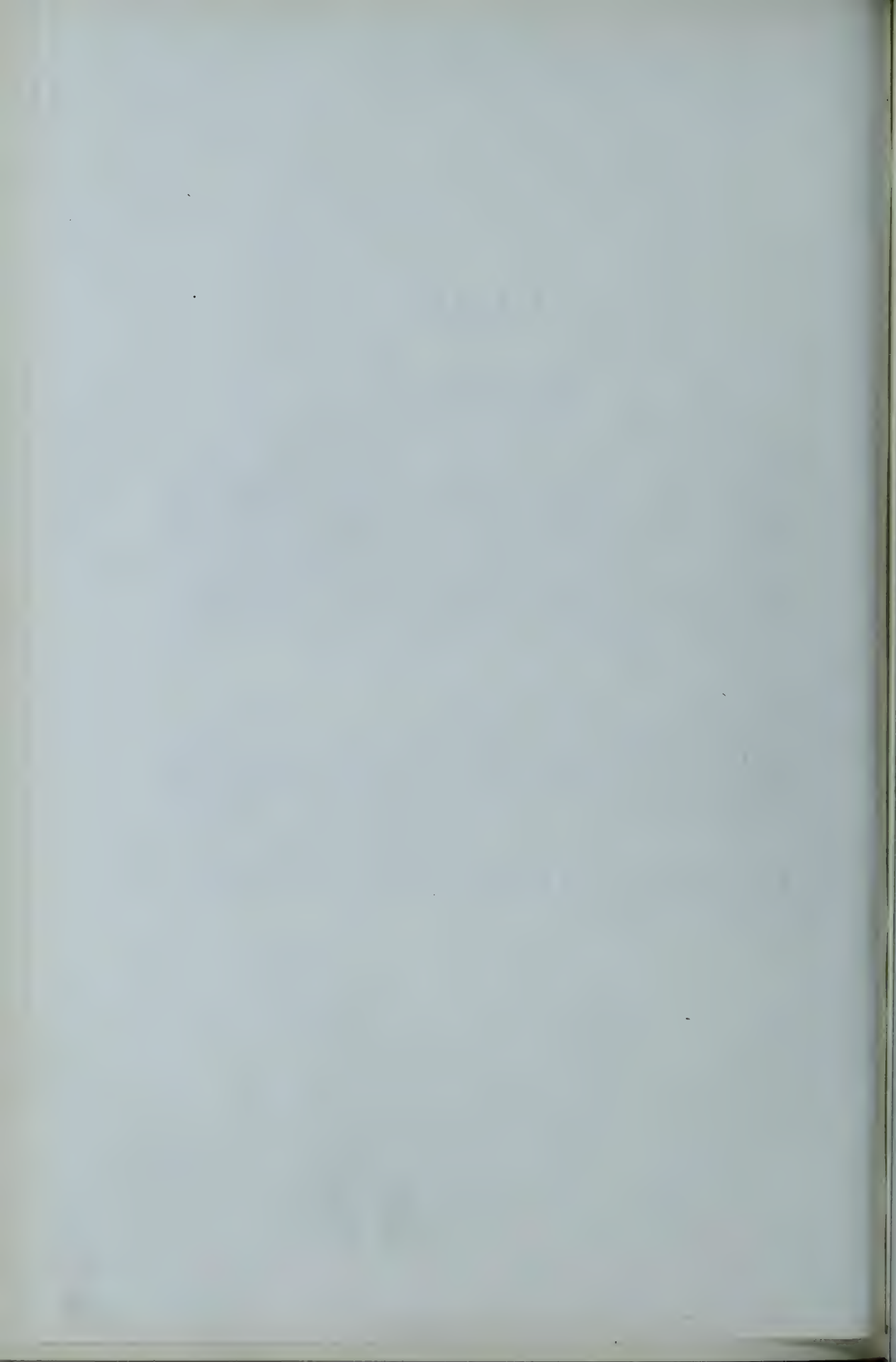
DIPLAZII sp. Presl. CALLIPTERIS. J. Sm. in Hook. Journ. of Bot.

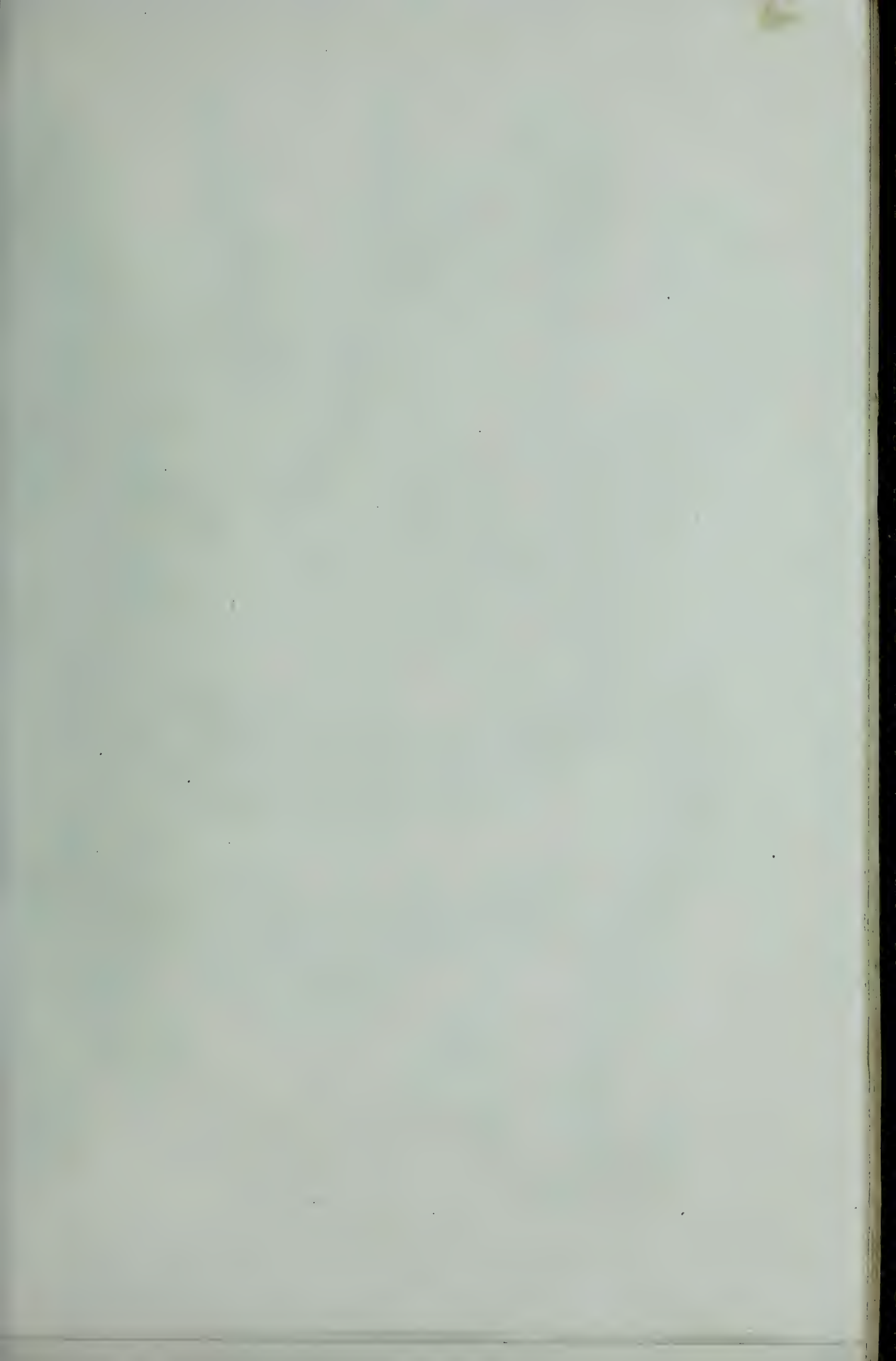
Sori lineares, elongati, bilaterales, seu duplices, aut venulæ superiori e furcatura primaria aut inferiori e furcatura secundaria, aut omnibus venis venulisque inserti. *Indusium* lineare, planum, bilaterale, seu duplex.—*Rhizoma repens*. Frondes sparsæ, coriaceæ, longe stipitatæ, simplices, ovatæ (vel pinnatæ, J. Sm.), acuminatæ, aut ovato-lanceolatæ, acutæ, integerrimæ. Venæ pinnatæ, crebræ, supra prominulæ, uni-bifurcatæ rarius simplices venulisque parallelæ, versus marginem frondis arcu acutangulo uno-duobus apice venulifero anastomosantes, venulis ex apice angulorum emergentibus liberis acutis. Pr.

Oxygonium ovatum. Pr.—*Asplenium*. Wall.

A Genus established by Presl, and which he says differs from *Anisogonium* (its nearly) in the veins and veinlets being parallel and forked; near the margin of the frond uniting in a double or single acute arch, again bearing a veinlet at their apex; and in the sori being (not always) bilateral or double. I find the veins of the sterile to anastomose much more than the fertile fronds in the species here figured.

TAB. CXVI.—Fig. 1. Sterile frond; nat. size: f. 2. Portion of the same to show the venation: f. 3. Portion of a fertile frond: f. 4. Lesser portion of the same: f. 5. Portions of sori: f. 6, 7. Sporangia: f. 8. Sporules;—magnified.









TAB. CXVII. A. B.

LYCOPODIUM. *Linn.*

The character of the Genus has been given at TAB. LXXXVIII.

Dr Greville and myself have attempted, in the Botanical Miscellany, vol. 2. p. 363, to divide this very extensive Genus into natural groups, as follows:

I. EXSTIPULATA. (*Polysticha. Mart.*)

A. Selagines. *Capsulis axillaribus.* (This is illustrated at our TAB. LXXXVIII.)

B. Spicata. *Sporangiis spicatis*: to which belong the well-known *L. cernuum*, and *L. clavatum*, and *L. Phlegmaria*.

II. STIPULATA. (*Oligosticha. Mart.*)

A. Complanata. (*Tristicha. Mart.*) *ramis compressis cum foliis distichis decurrentibus coadunatis; stipulis uniseriatis.* This group is illustrated at our present plate, TAB. CXVII. A, in the instance of *L. complanatum. L.*

B. Stachygynandrum. *Beauv. (Tetrasticha. Mart.) foliis distichis, stipulis biseriatis, semper superioribus (sporangiiis biformibus)*; of which *L. atroviride, Wall. TAB. NOSTR. CXVII. B*, is an example.

TAB. CXVII. A.—*Fig. 1.* Portion of *L. complanatum, L.*; *nat. size*: *f. 2, 3.* Branches with leaves and stipules: *f. 4.* Spike: *f. 5.* Fertile scale of the spike: *f. 6.* Sporangium;—*magnified.*

TAB. CXVII. B.—*Fig. 1.* Portion of *L. atroviride, Wall.*; *nat. size*: *f. 2.* Upper: and *f. 3.* under side of a portion of the stem with leaves and stipules: *f. 4.* Spike: *f. 5.* Sporangium and scale, with minute granular sporules: *f. 6.* Sporangium and scale, with large grains or sporules;—*magnified.*











TAB. CXVIII.

EUPODIUM. J. Sm.*

Indusium stipitatum.—Cæterum ut in *Marattia* (TAB. NOSTR. XXVI.)

Eupodium Kaulfussii. J. Sm. in Hook. Gen. Fil. sub tab. 26.—*Marattia alata*.

Kaulf. En. Fil. p. 32. (Obs. sub M. lævi.) Raddi, Fil. Bras. p. 74. t. 83, 84. (non Sm.)

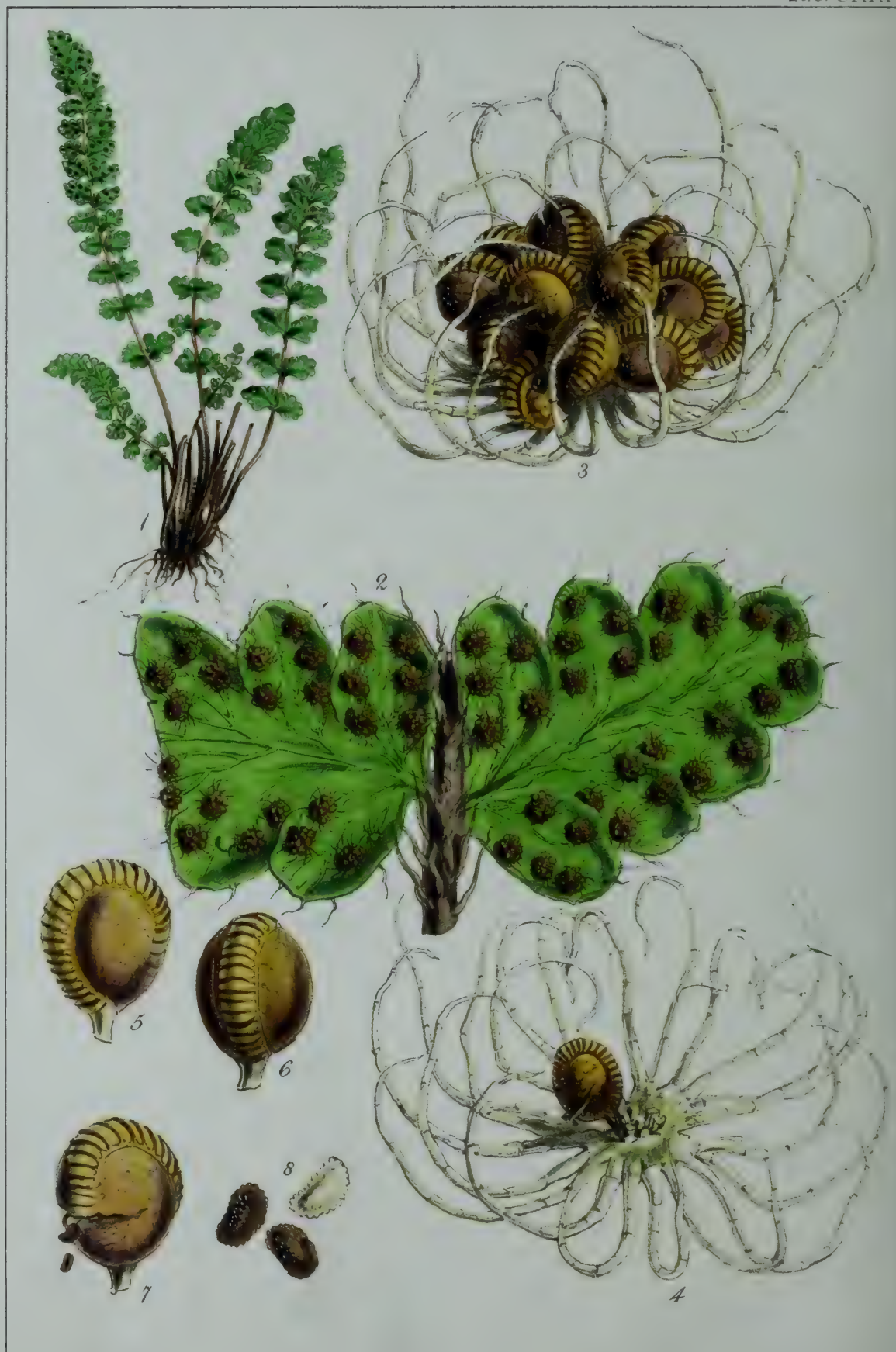
Kaulfuss seems to have been the first to notice that a *Marattia* of Brasil, the *M. alata* of Raddi, not of Smith, had stipitate indusia. Mr J. Smith has hence constituted of it the Genus *Eupodium*; on the same principle that *Sphæropteris* is kept distinct from *Diacalpe*.

TAB. CXVIII.—Fig. 1. Small portion of *Eupodium Kaulfussii*, upper side; nat. size: f. 2. Lesser portion of the same, with fructification, seen from beneath: f. 3. Two sori: f. 4, 5. Sori removed from the frond: f. 6. Sporules;—*magnified*.

* In Hook. Journ. of Bot. v. 4. p. 190. *Obs.*











TAB. CXIX.

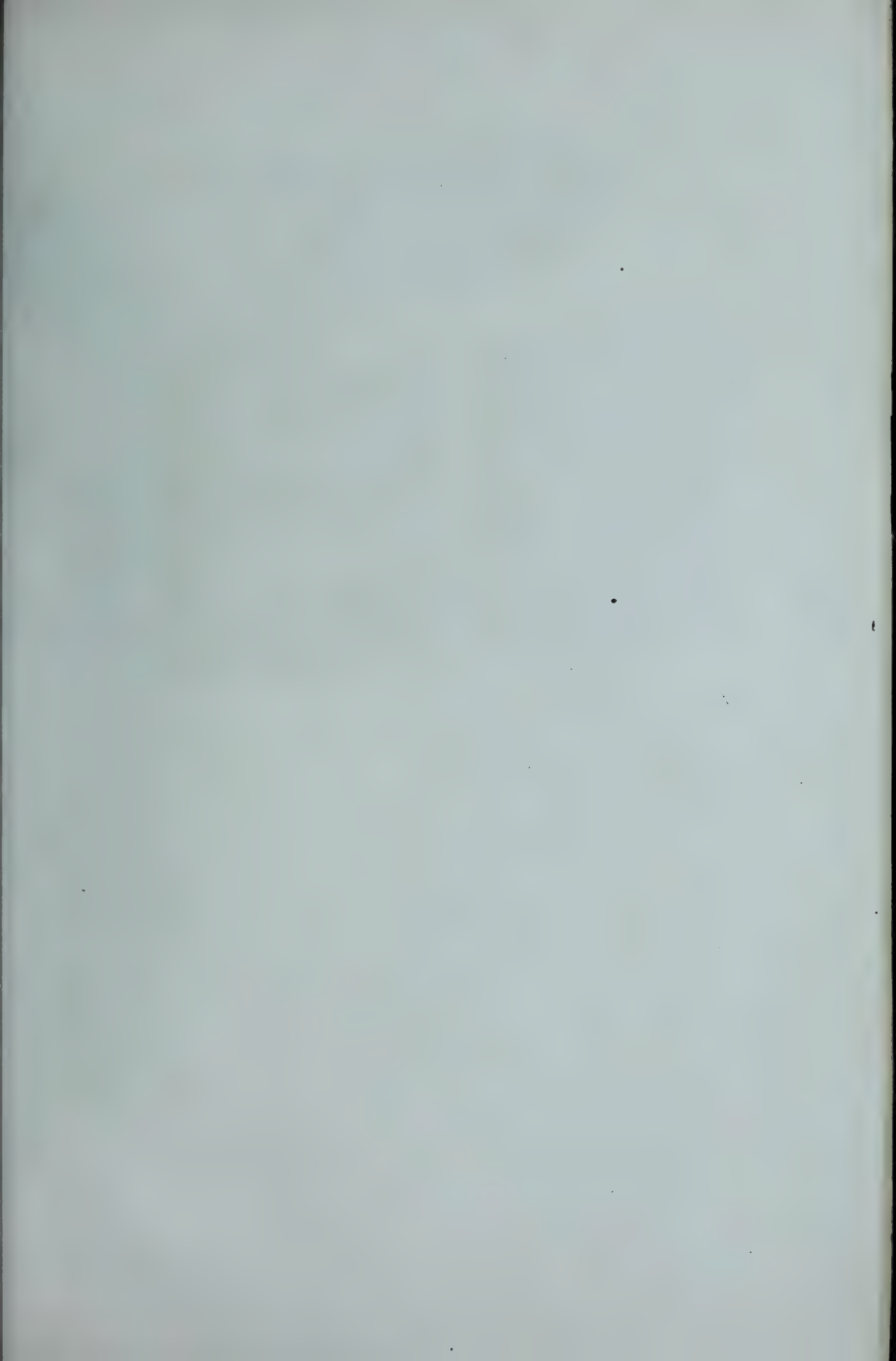
WOODSIA. Br.

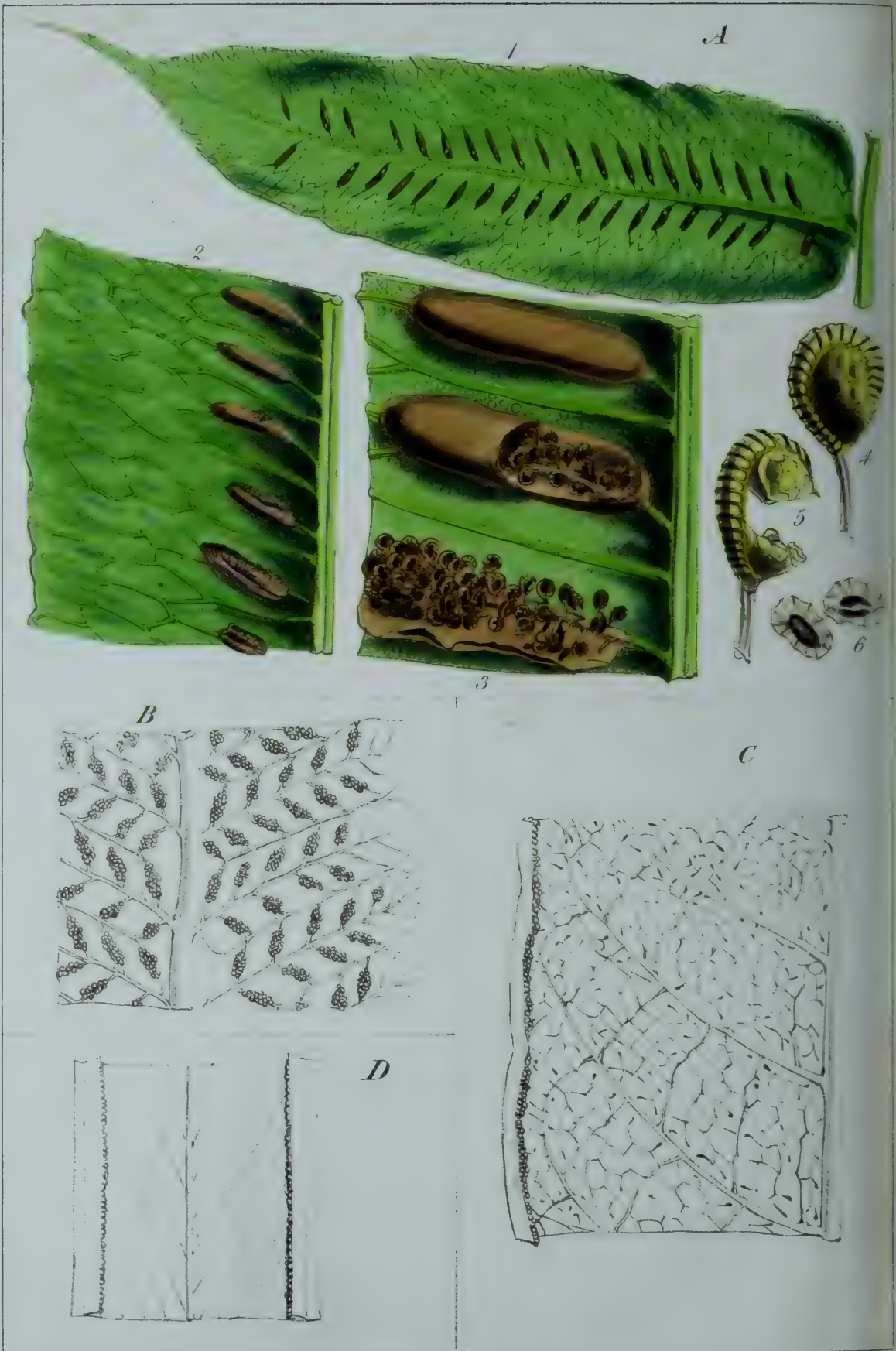
Sori dorsales, subrotundi, medio venularum inserti. *Indusium* calyciforme, apertum, margine crinitum, includens *sporangia* pedicellata; receptaculo communi elevato nullo.—*Filiculæ*, frondibus *cæspitosis*, *tenerrimis*, *pinnatim divisis*, *pilis simplicibus squamulisque angustis instructæ*. *Venæ pinnatæ*, *venulis furcatis apice liberis clavatis*. Br.

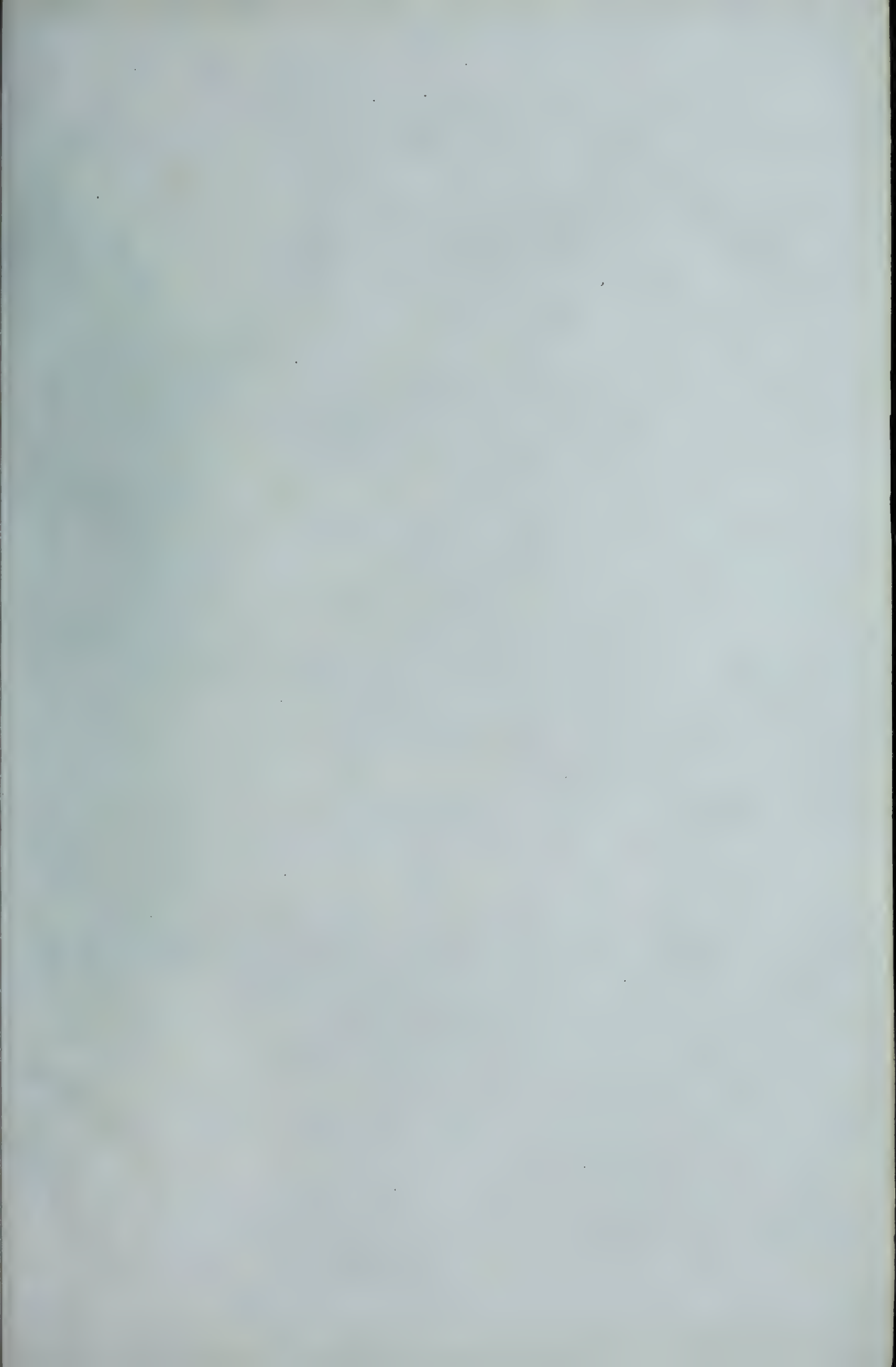
Woodsia hyperborea. Br.—*Polypodium*. Sw. Presl.

The hairs of the inferior indusium are readily enough seen both in *W. hyperborea*, and *W. Ilvensis*, the original species of this Genus; but the membrane or indusium itself can only be discovered by very careful dissection. We have ourselves, in the *Icones Filicum*, considered the *Woodsia Perrinniana*, which has no villous margin to the indusium, to belong to the present Genus; and Mr J. Smith has united with it both *Hymenocystis*, C. A. Meyer, (TAB. NOSTR. III.) and *Physematium*, Kaulf., admirably figured in Kunze, Anal. Pterid. t. 27.; all of which agree sufficiently in habit and venation, though there are some discrepancies in the indusium. *Hypoderris*, Br. (TAB. NOSTR. I.) with a similar indusium to that of *Woodsia*, differs totally in habit and venation.

TAB. CXIX.—Fig. 1. *Woodsia hyperborea*; nat. size: f. 2. Pinnæ: f. 3. Sorus: f. 4. Indusium: f. 5, 6, 7. Sporangia: f. 8. Sporules;—magnified.







SUPPLEMENT.

TAB. CXX. A.

ALLANTODIA. Br.

Sori in venas primarias basin versus lateraliter inserti, oblongo-cylindrici. *Indusium* tenuissimum, membranaceum (demum nigricans), sorum arcu involvens, infraque cum venulæ utrinque insertum, margine insertionis superiori v. interiori dehiscens, deinde reflexum.—Fronde *pinnatæ*; pinnæ *alternæ, oblongæ, integerrimæ*. Venæ *patentes, reticulatæ, versus marginem præcipue maculas oblongas subhexagonas formantes*. Br.

Allantodia Brunoniana. Wall. Pl. As. Rar. t. 52.—*Hemidictyum Brunonis*. Presl.

I quite agree with Mr J. Smith in restricting the Genus *Allantodia* to the present plant, already published by Dr Wallich, as a native of the East Indies, but previously known to Mr Brown from specimens collected in Otaheite, and whose lines of fructifications, as Dr Wallich well observes, "before the bursting of the indusium, are perfectly cylindrical, and look like a number of microscopical sausages, the singular appearance of which is so happily indicated in the name of the Genus."—Its place is near *Athyrium*.

TAB. CXX. A.—Fig. 1. Pinna; nat. size: f. 2. Portion of do.: f. 3. Sori in different states: f. 4, 5. Sporangia: f. 6. Sporules;—*magnified*.

TAB. CXX. B.

STEGNOGRAMME. Bl.

GYMNOGRAMMITIS sp. Bl.

Sori dorso venarum insidentes, lineares, parvi.—Fronde *sparsæ, herbacæ, pinnatæ*.

Venæ *pinnatæ, prominulæ, simplices, inferiores oppositæ in arcum antice acutangulum anastomosantes, supremæ apice libero acuto desinentes*. Venula ex angulo arcus cujuslibet emergens, inferiores in sinum arcus superioris, suprema in sinum laciniarum frondis excurrentes. Presl.

Stegnogramme aspidioides. Bl.—*Gymnogramme stegnogramme*. Bl. Fil. Jav.

TAB. CXX. B.—Portion of a pinna;—*magnified*. (from Presl.)

TAB. CXX. C.

AMPHIBLESTRA. Presl.

Sori marginales, lineares, continui interruptique. *Indusium* marginarium, lineare, angustum, scariosum.—Fronde *herbacæ tripartitæ, partitionibus pinnatifidis, aut una basi pinnatis, laciniis pinnisque oblongo-lanceolatis acuminatis repandodentatis*. Venæ *pinnatæ, distantes, costæformes, ramosissimæ*. Venulæ in maculas hexagonoideas inæquales anastomosantes, maculas minores ramuliferas continentes. Ramuli (venulæ secundariæ) *simplices ramosique, recti aut incurvi, apice capitellato libero desinentes*. Presl.

Amphiblestra latifolia. Pr.—*Pteris*. H.B.K.

TAB. CXX. C.—Portion of pinna;—*magnified*. (from Presl.)

TAB. CXX. D.

HAPLOPTERIS. Bory.

Sorus linearis, submarginalis, continuus, crassus. *Indusium* inframarginale, scariosum, latum.—Fronde *fasciculatæ, coriaceæ, simplices, venis lineatæ*. Venæ *pinnatæ, distantes, internæ, simplices*. Pr.

Haplopteris scolopendrina. Pr.—*Pteris*. Bory.

This plant is included by Mr J. Smith in his *Tæniopsis*, along with *Vittaria linearis*, &c. which have no indusium.

TAB. CXX. D.—Portion of a frond;—*magnified*. (from Presl.)

SYNOPSIS OF THE GENERA OF FERNS

ENUMERATED IN THIS WORK.

The following is Presl's arrangement of Ferns, the most full and complete that has yet been published, and by which those Subscribers, who wish to do so, can arrange the Plates and Descriptions of the present Work.

ORD. I. FILICES, *Presl*,

(who however excludes the Hymenophylloid Tribe, which are here introduced.)

SUBORD. I. HELICOGYRATÆ, *Bernh.*

TRIBE I. GLEICHENIACEÆ, *Kunze*

- 1.* *Gleichenia*, *Sm.* TAB. XLI. A.
2. Do. (*Calymella*, *Pr.*) TAB. XLI. B.
3. *Platyzoma*, *Br.* TAB. XLI. C.
4. *Mertensia*, *Willd.* TAB. XXXIX.
5. *Sticherus*, *Pr.*

(A Genus unknown to me, as it is to Presl, founded however by that author on the *Mertensia levigata*, Willd., and *Gleichenia lanigera*, Don; and said to differ from *Mertensia* by the sori being arranged in a double series.)

TRIBE II. CYATHEACEÆ, *Br.*

6. *Cyathea*, *Sm.* TAB. XXIII.
- Schizocæna*, *J. Sm.* TAB. II.
7. *Disphenia*, *Pr.*

(This appears to be the true *Cyathea arborea*, with the receptacle of the sporangia split in age, or from some other cause.)

8. *Cnemidaria*, *Pr.* TAB. IV.
9. *Hemitelia*, *Pr. Br.* (in part). TAB. XLII. A.

* The Nos. before the Genera correspond with the Nos. in Presl's "Tentamen Pteridographiæ."

10. *Trochopteris*, *Pr.* TAB. XXXIV.

11. *Metaxya*, *Pr.* TAB. XLII. B.

12. *Alsophila*, *Br.* TABS. IX, XXI.

Gymnosphæra, *Bl.* TAB. C.

13. *Matonia*, *Br.*

(This assuredly does not harmonize with this tribe. It belongs rather to *Aspidiariæ*; which see.)

SUBORD. II. CATHETOGYRATÆ, *Bernh.*

COHORS I. HYMENOPHORÆ, *Pr.*

TRIBE I. PERANEMACEÆ, *Pr.*

14. *Peranema*, *Don*, TAB. XXII.

Dicalpe, *Bl.* TAB. XCIX.

15. *Physematium*, *Kauf.*

(This is considered to be illustrated by *Woodsia*, *Br.* TAB. CXIX, and by *Hymenocystis*, *Mey.* TAB. III.)

Hypoderris, *Br. J. Sm.* TAB. I.

16. *Thyrsopteris*, *Kze.* TAB. XLIV. A.

17. *Cibotium*, *Kauf.*

(This will be found, together with *Thyrsopteris* and *Deparia*, *Hook. et Grev.*, in *Dicksoniaceæ*.)

TRIBE II. ASPIDIACEÆ, *Pr.*

SECT. I. NEPHRODIARIÆ, *Pr.*

18. *Lastrea*, *Pr.* TAB. XLV. A.

19. *Oleandra*, *Cav.* TAB. XLV. B.

20. *Nephrolepis*, *Schott*, TABS. XXV, XLVIII. A.

21. *Nephrodium*, *Schott*, TAB. XLVIII. B.

SYNOPSIS.

SECT. II. ASPIDIARIE, *Pr.*

22. Polystichum, *Schott.* TAB. XLVIII. C.
23. Phanerophlebia, *Pr.* TAB. XLIX. A.
(Mr J. Smith brings *Amblia*, n. 78, here.)
24. Cyclodium, *Pr.* TAB. XLIX. B.
25. Cyrtomium, *Pr.* TAB. XLIX. C.
26. Sagenia, *Pr.* TAB. LIII. A.
Fadyena, *Hook.* TAB. LIII. B.
Mesochlæna, * *Br.* TAB. XXIV.
27. Aspidium, *Schott.* TAB. XXXIII.
- (77. Pr.) Pleocnemia, *Pr.* TABS. LXX, XCVII.
(The presence of an indusium proves that this should be removed from *Polypodiaceæ*, and placed here.)
- (13. Pr.) Matonia, *Br.* TAB. XLIII.
(*Prionopteris*, Wall. Cat. n. 184.)
28. Didymochlæna, *Desv.* TAB. VIII.

TRIBE III. ASPLENIACEÆ, *Pr.*

SECT. I. CYSTOPTERIDÆ, *Pr.*

29. Cystopteris, *Bernh.* TAB. LII. B.
30. Acrophorus, *Pr.*
(This seems to be the same with *Cystopteris*, only with the sorus situated at the apex of a veinlet.)
31. Leucostegia, *Pr.* TAB. LII. A.
(Mr J. Smith unites several species of *Davalliæ*, *Pr.*, with this, and places in *Davalliaceæ*.)
32. Ragiopteris, *Pr.*
(Is the same with *Onoclea*.)
33. Onoclea, *Linn.* TAB. LXXII.

SECT. II. BLECHNACEÆ, *Pr.*

34. Athyrium, *Roth.* TAB. XVI.
35. (36. Pr.) Woodwardia, *Sm.* TAB. XVII.
36. (35. Pr.) Doodia, *Br.* TAB. LIV. A.
37. Blechnum, *Linn.* TAB. LIV. B.
(*Sadleria*, *Kaulf.*)
- Salpichlæna, *J. Sm.* TAB. XCIII.

SECT. III. ASPLENIARIE, *Pr.*

38. Asplenium, *Linn.* TABS. VI, XXX.
39. Plenasium, *Pr.*
(This is *Asplenium*, according to Link; but, according to Mr J. Smith, the two species of this Genus are, both, the barren fronds of *Osmunda Javanica*.)

- Allantodia, *Br.* SUPPL. TAB. CXX. A.
- Ceterach, *Willd.* TAB. CXIII. A.
- Neottopteris, *J. Sm.* TAB. CXIII. B.
40. Hemidictyum, *Pr.* TAB. LV. A.
(Excluding *Allantodia*, *Br.*)

SECT. IV. DIPLAZIÆ, *Pr.*

41. Diplazium, *Sw.* TAB. LV. B.
42. Anisogonium, *Pr.* TAB. LVI. A. B.
43. Digrammaria, *Pr.* TAB. LVI. C.

44. Oxygonium, *Pr.* TAB. CXVI.

(Mr J. Smith unites this and the preceding Genus under *Callipteris*, *Bory.*)

SECT. V. SCOLOPENDRIÆ, *Pr.*

45. Scolopendrium, *Sm.* TAB. LVII. B.
46. Antigrama, *Pr.* TAB. LVII. A.
47. Camptosorus, *Link.* TAB. LVII. C.

TRIBE IV. DAVALLIACEÆ, *Gaud.*

SECT. I. DAVALLIÆ, *Pr.*

48. Microlepia, *Pr.* TAB. LVIII. A.
49. Saccoloma, *Kaulf.* TAB. LVIII. B.
50. Davallia, *Sm.* TAB. XXVII.
Humata, *Cav.* TAB. CXIV.
Loxsoma, *All. Cunn.* TAB. XV.
51. Stenolobus, *Pr.*
(Is *Davallia*.)

HYMENOPHYLLÆ, *Endl.*

- Hymenophyllum, *Sm.* TAB. XXXII.
- Trichomanes, *Linn.* TABS. XXXI, CVIII.

SECT. II. LINDSÆACEÆ, *Pr.*

- Isoloma, *J. Sm.* TAB. CII.
52. Lindsæa, *Dryand.* TAB. LXIII. A.
53. Schizoloma, *Gaudich.* TAB. LXIII. B.
Synaphlebium, *J. Sm.* TAB. CI.
Dictyoxiphium, *Hook.* TAB. LXII.

TRIBE V. DICKSONIACEÆ, *Pr.*

54. Balantium, *Kaulf.* TAB. XX.
Cystodium, *J. Sm.* TAB. XCVI.
55. Culcita, *Pr.* TAB. LX. A.
56. (57. Pr.) Leptopleuria, *Pr.* LX. B.
57. (56. Pr.) Dicksonia, *Pr.* TAB. LXI. A.
58. Patania, *Pr.* TAB. LXI. B.
(*Sitobium*, *Desv.*, *J. Sm.*)
- (17. Pr.) Cibotium, *Kaulf.* TAB. XXV.
- (16. Pr.) Thyrsopteris, *Kze.* TAB. XLIV. A.
(The two preceding Genera are arranged in *Peranemaceæ* by Presl.)

Deparia, *Hook.* TAB. XLIV. B.

TRIBE VI. ADIANTIACEÆ, *Pr.*

SECT. I. ADIANTARIE, *Pr.*

59. Haplopteris, *Pr.* SUPPL. TAB. CXX. D.
(*Taniopsis*, *J. Sm.*, in part.)
60. (61. Pr.) Pteris, *L.* TAB. LXIV. A.
61. (60. Pr.) Lomaria, *Willd.* TAB. LXIV. B.
62. Monogonia, *Pr.*
(“Expurganda,” Link.—it is *Pteris arguta*, *Poir.*)
63. Campteria, *Pr.* TAB. LXV. A.
64. Litobrochia, *Pr.* TAB. LXV. B.
(Including *Dryopteris*, *J. Sm.*)
65. Amphiblestra, *Pr.* SUPPL. TAB. CXX. C.

* Sub nom. *Sphaerostephani*, *J. Sm.*

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66. *Allosorus*, *Bernh.* TAB. V.
Platyloma, *J. Sm.* TAB. CXV. A.
Cryptogramma, *Br.* TAB. CXV. B.
Ceratodactylis, *J. Sm.* TAB. XXXVI.
Onychium, *Kaulf.* TAB. XI.
Jamesonia, *Hook. et Grev.* TAB. XIII.
67. *Cassebeera*, *Kaulf.* TAB. LXVI. A.
68. *Adiantum*, *Linn.* TAB. LXVI. B.
Hewardia, *J. Sm.* TAB. LXXXIX.
Ochropteris, *J. Sm.* TAB. CVI. A.
69. *Cheilanthes*, *Sw.* TAB. CVI. B.

SECT. II. LONCHITIDEÆ, *Pr.*

70. *Hypolepis*, *Bernh.* TAB. LXVII. A. B.
(Sub nom. *Cheilanthes*.)
71. *Lonchitis*, *L.* TAB. LXVIII. A.

COHORS II. GYMNOSEORÆ, *Pr.*

TRIBE VII. VITTARIACEÆ, *Pr.*

72. *Vittaria*, *Sm.* TAB. LXVIII. B.
73. *Prosaptia*, *Pr.*
(Is *Polypodium*, according to *J. Sm.*)

TRIBE VIII. POLYPODIACEÆ, *Pr.*

SECT. I. STRUTHIOPTERIDEÆ, *Pr.*

74. *Struthiopteris*, *Willd.* TAB. LXIX. A.

SECT. II. POLYPODIEÆ, *Pr.*

75. *Polypodium*, *Pr.* TAB. LXIX. B.
76. *Goniopteris*, *Pr.* TAB. XXXVIII.
77. *Pleocnemia*,* *Pr.* TAB. LXX. A.
- (107.) *Stenosemia*,† *Pr.* TAB. XCIV.
78. *Amblia*, *Pr.*
(*J. Smith* refers this to *Phanerophlebia*, n. 23.)
79. *Goniophlebium*, *Pr.* TAB. LXX. B.
80. *Marginaria*, *Bory*, TABS. XIV, LI.
81. *Campyloneurum*, *Pr.* TAB. LXXI. A.
(*Cyrtophlebium*, *Br. J. Sm.*)
82. (83. *Pr.*) *Dictyopteris*, *Br.* TAB. LXXI. B.
83. (82. *Pr.*) *Pleopeltis*, *H.B.K.* TAB. XVIII.
Phlebodium, *Br. J. Sm.* TAB. CXII.
84. *Phymatodes*, *Pr.* TAB. XXIX.
(*Drynaria*, *Bory*, *J. Sm.*)
85. *Aglaomorpha*, *Schott*, TAB. XCI.
(*Psygium*, *Pr.*)
Dryostachyum, *J. Sm.* TAB. XCV.
86. *Nipholobolus*, *Kaulf.* TAB. LXXXIII.

SECT. III. LECANOPTERIDEÆ, *Pr.*

87. *Lecanopteris*, *Bl.* TAB. CX. B.

88. *Calymmodon*, *Pr.*
(Is *Grammitis*.)

TRIBE IX. GRAMMITACEÆ, *Pr.*

- (93. *Pr.*) *Synammia*, *Pr.* TAB. CX. A.
89. *Monogramma*, *Schh.* TAB. LXXXIV.
90. *Grammitis*, *Pr.* TAB. LXXII.* B.
91. *Stegnogramme*, *Bl. SUPPL.* TAB. CXX. B.
92. *Meniscium*, *Schreb.* TAB. XL.
93. *Synammia*, *Pr.*
(See above.)
94. *Microgramma*, *Pr.* TAB. LXXIII. A.
95. *Loxogramme*, *Pr.* TAB. LXXIII. B.
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Antrophyum, *Kaulf.* TAB. CIX. A.
Diblemma, *J. Sm.* TAB. CIX. B.
96. *Selliguea*, *Bory*, TAB. LXXIV. A.

SECT. II. HEMIONITIDEÆ, *Pr.*

97. (96. *Pr.*) *Hemionitis*, *Linn.* TAB. LXXIV. A.
98. (97. *Pr.*) *Gymnogramma*, *Desv.* TAB. XXXVII.
(Including *Leptogramme*, *J. Sm.*)
Ceterach, *Willd.*
(See in *Blechnaceæ*.)

TRIBE X. TÆNITIDEÆ, *Pr.*

99. *Pleurogramme*, *Pr.* TAB. LXXV. A. (and TAB. LXXII. A.)
Jenkinsia, *Hook.* TAB. LXXV. B.
100. *Notholæna*, *Br.* TAB. LXXVI. A.
Tæniopteris, *Hook.* TAB. LXXVI. B.
101. *Pteropsis*, *Pr.* TAB. LXXVII. A.
102. *Tænitis*, *Sw.* TAB. LXXVII. B.
Lomagranne, *J. Sm.* TAB. XCVIII.
103. *Drymoglossum*, *Pr.* TAB. LXXVIII. A.

TRIBE XI. ACROSTICHACEÆ, *Pr.*

104. *Polybotrya*, *H.B.K.* TAB. LXXVIII. B.
Elaphoglossum, *Schott*, TAB. CV. A.
Stenochlæna, *J. Sm.* TAB. CV. B.
105. *Olfersia*, *Raddi*, TAB. LXXIX. A.
106. *Aconiopteris*, *Pr.* TAB. LXXIX. B.
107. *Stenosemia*, *Pr.*
(See above in *Polypodiaceæ*.)
108. *Campium*, *Pr.* TAB. LXXX. A.
109. *Platyterium*, *Desv.* TAB. LXXX. B.
110. *Acrostichum*, *Linn.* TAB. LXXI. A.
111. *Pœcilopteris*, *Pr.* TAB. LXXI. B.
112. *Gymnopteris*, *Bernh.* TAB. LXXXV.
Photinopteris, *J. Sm.* TAB. XCII.

* Incorrectly represented without indusium. See in *Aspidiaceæ*, after n. 27.

† This Genus has the sori scattered, sometimes oblong, sometimes round. It must therefore be removed from *Acrosticheæ*, where Presl has placed it, and rank with *Polypodiæ* or *Grammitidæ*.

* TAB. LXXII. will be placed here, although it contains a genus [figure A. *Pleurogramme*,] that belongs to *Tænitidæ*, and which is again given in its proper place.

SYNOPSIS.

*The following Orders are not included by Presl
in his Work:*

ORD. II. PARKERIACEÆ, *Hook.*
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Lygodictyon, *J. Sm.* TAB. CXI. B.
Lygodium, *Sw.* TAB. XXVIII.
Anemia, *Sw.* TAB. XC.
Anemidictyon, *J. Sm.* TAB. CIII.
Trochopteris, *Gardn.* TAB. CIV. A.
Mohria, *Sw.* TAB. CIV. B.

ORD. IV. OSMUNDACEÆ, *Mart.*
Osmunda, *Linn.* TAB. XLVI. A.
Todea, *Willd.* TAB. XLVI. B.

ORD. V. MARATTIACEÆ, *Kaulf.*

Marattia, *Sw.* TAB. XXVI.
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Kaulfussia, *Bl.* TAB. LIX. A.

ORD. VI. OPHIOGLOSSEÆ, *Br.*

Ophioglossum, *Linn.* TAB. LIX. B.
Botrychium, *Sw.* TAB. XLVII. A.
Helminthostachys, *Kaulf.* TAB. XLVII. B.

ORD. VII. LYCOPODIACEÆ, *Sw.*

Lycopodium, *Linn.* TABS. LXXXVIII,
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* The figure at TAB. 67, A, (as well as B,) should be referred to *Hypolepis*.

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* The figure at TAB. 61, A, (as well as B,) should be referred to *Patania*, (*Sitobium*, *Desv. et J. Sm.*)

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